NORTHEAST MARKETING ISSUE
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Pest Market Not Hurt by Fewer Vegetable Acres

Growers Expected to Use More Materials To Prevent Losses

By JOHN CIPPERLY
Croplife Washington Correspondent

WASHINGTON—The USDA report of a 10% over-all cut in early and mid-spring vegetable production will probably not be reflected in a diminished use and sale of pesticidal chemicals, according to Lea S. Hitchner, executive secretary of the National Agricultural Chemicals Assn.

According to USDA, the reduction of fresh vegetable production this year from the 1956 figure will be the heaviest in tomatoes, onions and sweet corn in that order and at the same time production of broccoli, cabbage and green peas will also be lighter than in 1956.

However, there are some plus signs in the 1957 production estimates, according to USDA. For example, those crops which offset declining production include lettuce, cauliflower, asparagus, cucumbers and snap beans.

For the lesser fresh vegetable crops, important reductions are reported for

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TVA Workshop Sums Up Economics Of Fertilizer Use

KNOXVILLE—Agricultural experiment station researchers reported in a workshop-type session here March 26-28 the many ways that fertilizers can affect crop yields and farm profits. TVA agricultural economists and sociologists were hosts to the three-day conference.

Bruce I. Baird, North Carolina State College soils specialist, reported that corn planted on soil containing little organic matter responded to nitrogen applications more than did corn planted on soil that contained several times more organic matter. Fertilizer was applied at rates from 150 to over 400 lb. per acre.

Following Mr. Baird's discussion of fertilizer results, Roger Peterson, Oregon State College statistician, reported on plans for his institution's agronomic-economic research.

Dr. John T. Pesek and Jack Doll, an agronomist and an agricultural economist from Iowa State College, said their fertilizer experiment was designed to find the following: "How total rainfall affects yields; how the amount and time of rainfall affect a crop yield; the effect of the available soil moisture at the time of seeding in relation to the amount of rainfall that falls during the crop season; and the generalization of those results—if practical—from historical rainfall data."

The two Iowa fertilizer specialists are also studying how farmers can get the most results out of a dollar's worth of fertilizer—rather than how to obtain the greatest crop yields.

Dr. T. E. Tramel and Dr. J. D. Lancaster, an agricultural economist and an agronomist from Mississippi State College, described their research with fertilizing cotton. The small plot work there is geared toward finding the most profitable methods by which farmers can grow

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American Chemical Society Hears Technical Papers on Herbicides at Annual Meeting

MIAMI, FLA.—Among the 1,358 papers listed on the program of the 131st national meeting of the American Chemical Society here April 7-12 were a number covering pesticides, and means of testing their residues and other properties.

Edgar Selz and Paul Lindner, Emulsol Chemical Corp., Chicago, discussed recent developments in pesticide formulations, stating that since no universal emulsifier has yet been found, certain combinations of different emulsifiers have been developed to cover a wide range of formulations.

The paper said that the introduction of calcium salts of alkyl aryl sulfonic acids contributed to the effectiveness of possible emulsifier blends, but calcium has a tendency to form insoluble 2,4-D salts in 2,4-D ester formulations. For this reason, they said, the emulsifiers used for herbicide formulations should be free of calcium.

Certain amine salts, and outstandingly certain polyamine salts, are of marked utility in herbicidal formulations. Special formulations are required for some of the organic phosphates and carbamates and for PCP (pentachlorophenol).

Combined applications of pesticides with fertilizers raise new and formidable problems. There are many serious disadvantages in the use of dry mixes, the authors said. The combination of emulsifiable liquid pesticides

(Continued on page 21)

Contracts Let for $1.75 Million Gypsy Moth Control Project

WASHINGTON — Contracts were awarded April 4 to three aerial spraying firms to apply 2,400,000 gallons of DDT-oil mixture in three northeastern states in the cooperative federal-state gypsy moth eradication program, the U.S. Department of Agriculture has announced.

The contracts, totaling approximately $1,750,000 were awarded to Lebonair Inc., Lebanon, Pa.; Chris D. Stolzfus, Coatesville, Pa.; and Roberts Aircraft, Boise, Idaho. Areas to be treated include land in New York, New Jersey and Pennsylvania infested by the gypsy moth—an insect highly destructive to forest and shade trees. Spraying is expected to start in some areas April 16 and will continue till mid-June on this largest single aerial spraying job ever undertaken in the U.S.

The contracts include all costs of the DDT insecticide, plus mixing, transporting and applying the spray material. Due to differences in terrain and difficulty of operations in certain parts of the infested area, bids varied somewhat, but the average for the 2,400,000 acres to be covered was 73¢ for each gallon applied. One pound of DDT dissolved in one gallon of light oil will be applied to each acre.

Here is a rundown on areas to be treated by each firm, including gallons to be applied and tentative starting dates:

Lebonair, Inc., 1,500,000 gallons—an area on Long Island, N.Y., including all of Suffolk County, and a small portion of Nassau County, starting date, April 16; an area in New York east of the Hudson River, including all of Putnam County and most of Dutchess and Westchester counties, starting date, May 7; and most of Sullivan County and part of Delaware and Ulster counties, also starting May 7.

Chris D. Stolzfus 400,000 gallons—spotted areas in northern New Jersey in Bergen, Morris, Passaic, Sussex and Warren counties, and in Pike County, Pennsylvania, starting date, April 23; and spotted areas in the New York counties of Broome, Chenango, Cortland, Madison, Oneida and Otsego, starting date, May 7.

Roberts Aircraft, 500,000 gallons—an area in New York west of the

(Continued on page 20)

USDA to Establish Field Station for Nematode Studies

KNOXVILLE—A permanent field station for research on nematode problems, especially the soybean cyst nematode, will be established on the University of Tennessee's west state experiment station, at Jackson. Operation will be cooperative, between the U.S. Department of Agriculture and the University of Tennessee. States to be served include Tennessee, Mississippi, Arkansas, Kentucky, Missouri, Illinois and such other adjoining states as will require nematode research projects.

Location of the field station was agreed on after infestation of the soybean cyst nematode were found in Lake County, Tennessee, and in areas west of the Mississippi, in Missouri and Arkansas. First task will be to check the known infested regions and to determine the movement of cyst nematodes from farm to farm, and from state to state.

Pathologists at the field station are not concerned with regulation; that will be in another department of USDA.

According to A. L. Taylor, of the USDA nematology branch, Beltsville, Md., who signed the agreement with John Ewing, University of Tennessee Experiment

(Continued on page 21)

FDA Proposes Tolerance For Inorganic Bromides

WASHINGTON—The U.S. Food & Drug Administration has announced that it proposes to establish a tolerance of 20 parts per million for residues of inorganic bromides (calculated as Br) in or on the raw agricultural commodity plums, that have been fumigated with ethylene dibromide in accordance with the Mediterranean fruit fly control program or the quarantine program of the U.S. Department of Agriculture.

Fabricated Metals Building Four New Liquid Plants

SAN LEANDRO, CAL. — Four liquid fertilizer plants are currently being built by Fabricated Metals, Inc., San Leandro, Cal., for erection in widely divergent areas throughout the country.

A plant for manufacture of aqua ammonia and neutral mixes will be erected for Delaware Valley Chemical Co., at Swedesboro, N.J. A plant for manufacture of aqua, only, will be installed at Kimberly, Idaho, for Farm Service, Inc. A third plant for aqua for neutral mixes will be built for Melville E. Willson Co. at Madera, Cal. A fourth plant for aqua ammonia is being built at Linden, Cal., for Fertilizers, Inc.

USDA's Three-Year Study Reveals Mite As Carrier of Wheat Streak-Mosaic Virus

WASHINGTON, D.C. — The wheat curl mite has been singled out by the U.S. Department of Agriculture as the insect carrier of wheat streak-mosaic virus in the Great Plains region, following a three-year search for insects and mites that might be performing this function. The search was made in cooperation with the Kansas and Nebraska agricultural experiment stations by R. V. Connin of the Agricultural Research Service of USDA, and Robert Staples of the Nebraska station.

The wheat curl mite was first implicated as the carrier of this virus in Canada, by Dr. J. T. Slykhuis in 1953.

Wheat streak-mosaic has been especially destructive to winter wheat in western Kansas and has caused severe damage in Nebraska, Colorado, and South Dakota. Some loss to the disease is reported also in Wyoming and western Iowa, and at scattered points elsewhere in the United States.

The disease has wiped out entire wheat crops in some areas. The virus invades and grows within the wheat plant destroying the chlorophyll, and causing plant leaves to become streaked, spotted, or mottled with yellow. Growth of the plant is hampered or halted.

Over the years, several insects have been suspected as transmitters of this virus. Insects and mites investigated in the recent cooperative study included the greenbug, crown aphid, English grain aphid, apple grain aphid, corn leaf aphid, six-spotted leafhopper, painted leafhopper, migratory and two-spotted grasshoppers, thrips, brown wheat mite, chinch bug, wheat stem maggot, and others. None of them was found to transmit the wheat disease, however. Only the wheat curl mite was positively tagged as a carrier.

Wheat curl mites can scarcely be seen with the naked eye. They easily pass through screen and cloth barriers that confine many of the smaller insects. These mites are often found clinging to the legs of aphids and thrips.

The researchers surmised that reported cases of transmissions of streak-mosaic virus by other insects might have been caused by the unknown presence of the wheat curl mite. Insects carrying their mite burden from infected plants could have spread the infection. Then, too, even slight movements of the air can serve to transport the mites.

Some viruses of wheat are carried over in the soil from year to year, but it is believed that wheat streak-mosaic virus is not.

U.S. Borax Moves North Central Office

LOS ANGELES—The agricultural sales department of the U.S. Borax & Chemical Corp. on April 1 moved its North Central district office from Kansas City to 3456 Peterson Ave., Chicago 45, Ill.

E. H. Schmierer, North Central district manager, said that the move was being made in order "to consolidate many of the company's Midwest activities in one location and to provide better facilities for servicing the many customers in the Midwest whose headquarters are in Chicago."

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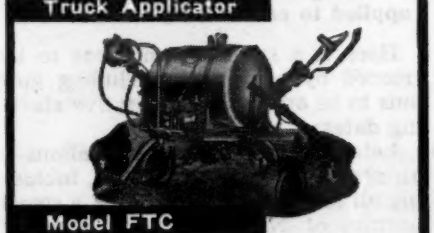
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F. H. Kennedy

Potash Firm Advances F. H. Kennedy in Sales

WASHINGTON, D.C. — Potash Company of America has announced that F. H. Kennedy has been assigned to take over the accounts formerly served by T. E. Bradley, recently retired from the firm. Mr. Kennedy, 37, will now be responsible for PCA's sales in the Middle West. Mr. Bradley will remain with PCA in a consulting capacity.

Mr. Kennedy, well known in the industry throughout the Midwest, is a graduate of Catholic University, Washington, D.C., and a native of Boston. He served as a captain in the U.S. Marine Corps during World War II, and was a fighter pilot in the Pacific.

USDA Approves Simazin For Weed Control On Non-Cropped Land

NEW YORK — Geigy Agricultural Chemicals has announced that claims have recently been accepted by the U.S. Department of Agriculture for the use of Geigy Simazin for general weed control on non-cropped land.

The herbicide has been extensively tested in the United States and Switzerland and has been sold in Europe as a general herbicide for the past two years. It is said to show maximum activity on germinating weeds and should therefore be applied just before or during germination or emergence for best results.

When applied at a rate of 10 lb. per acre prior to weed emergence, the makers say that Simazin 50W will prevent growth for about one year of such grasses and broadleaf weeds as barnyard grass, witch grass, yellow foxtail, wild oats, crabgrass, broadleaf plantain, dandelion, lamb's quarters, pigweed, ragweed, nightshade, purslane, velvet leaf and mustard.

Simazin is relatively non-toxic to humans and domestic animals, Geigy states. It is non-corrosive and can be removed from spray equipment by merely washing thoroughly with water. Its low solubility causes it to remain in the upper layers of soil with a minimum of leaching, and because there is no lateral leaching, Simazin can be used adjacent to cropped areas with no danger of injuring the crop. In addition, the lack of phytotoxicity to foliage minimizes the drift hazard which accompanies many herbicides, according to Geigy.

Firm Chartered

ALLENDALE, S.C.—Allendale Grain Co. here has been chartered with capital stock of $100,000. One of its activities will be to manufacture and distribute agricultural supplies, including fertilizer. W. F. Myrick is president.

Industry Trade Marks

The following trade marks were published in the Official Gazette of the U.S. Patent Office in compliance with section 12 (a) of the Trademark Act of 1946. Notice of opposition under section 13 may be filed within 30 days of publication in the Gazette. (See Rules 20.1 to 20.5.) As provided by Section 31 of the act, a fee of $25 must accompany each notice of opposition.

Guthion, in capital letters, for insecticides. Filed April 19, 1956, by Chemagro Corp., New York. First use March 28, 1956.

Nox-Moss, in outlined capital letters, for herbicides. Filed July 9, 1956, by Agro Products Co., Puyallup, Wash. First use June 9, 1955.

Nurish, Makes Plants Flourish!, the first part in hand-drawn outline letters, with the latter three words

beneath, for soluble plant food. Filed Jan. 19, 1956, by W. R. Grace & Co., New York. First use Feb. 16, 1952.

Five Star, in capital letters, with five stars appearing between the words, for fertilizers. Filed March 9, 1956, by W. R. Grace & Co., New York. First use, 1935.

Flourish, in capital letters, for lawn top dressing. Filed June 6, 1956, by C. D. Wagstaff & Co., Skokie, Ill. First use April 6, 1956.

Kenco Folo Food, for liquid fertilizer. Filed June 21, 1956, by Kenco

Chemical Co., Inc., Summerdale, Ala. First use Dec. 30, 1955.

Gran-Form, in hand-drawn caps and lower case, for packaged fertilizer. Filed July 24, 1956, by Pennsylvania Salt Manufacturing Co., Philadelphia, Pa. First use Dec. 1, 1952.

New Safety Record Set By American Potash Corp.

TRONA, CAL.—The Trona plant of American Potash & Chemical Corp. recently set an all-time record of 2,000,000 man-hours without a lost-time accident. The safety record, involving more than 850 employees at the company's main plant here, covered nearly a full year without a lost-time accident.

The plant's previous record of 1,000,000 safe man-hours was set between August and December of 1954, after which AP&CC received the Lammot du Pont Safety Award for the greatest improvement in safety in the chemical industry.

Since then, AP&CC has received more than 10 safety awards as a result of the company's intense safety education program conducted for the past three years.

In connection with the new safety record, AP&CC President Peter Colefax said the 2,000,000 man-hour record is "clear evidence that our safety program is a solid success. Our records were not the result of luck," Mr. Colefax stated in a letter to all Trona employees. "They were, rather, the result of initiative, sound thinking, good supervision and alert workmanship."

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Z. Z. Dworkin

INS GLENN CHEMICAL — Z. Z. workin has been named manager of les of the newly organized Glenn emical Co., 2735 North Ashland ve. in Chicago, manufacturers of a w chemical insect repellent trade-arked Tabutrex. Mr. Dworkin grad-ted from the University of Chicago th a degree in botany and a asters degree in biological science. ter teaching botany at the Univer-y of Connecticut, he became area les supervisor for Fairfield Chemi-l Division, Food Machinery and emical Corp., a position he held r seven years. In World War II, Mr. workin served as an instructor at e Infantry School at Fort Benning, a. He was discharged in 1946 with e rank of major.

William P. McDonnell oins Michigan Chemical

ST. LOUIS, MICH. — William P. cDonnell has joined the sales staff Michigan Chemical Corp., St. ouis, Mich. His headquarters will e in New York City at the firm's astern sales office at 230 Park Ave.

Mr. McDonnell is a 1950 graduate Columbia University with a bache-or degree in chemistry. He also ompleted postgraduate studies in dvanced organic and inorganic hemistry and later studied market-ng in Columbia University's Grad-ate School of Business.

He comes to Michigan Chemical ith a diversified experience in the hemical industry, having been asso-iated with Pan American Chemicals orp. as a sales engineer and earlier s salesman with the printing ink ivision, Interchemical Corp. Prior o this he served as a chemist with he research laboratories of Inter-hemical Corp.

Mr. McDonnell will devote his ef-orts to sales and technical service n bromine, bromine compounds, harmaceutical intermediates, mag-esium compounds, agricultural roducts and other specialized chem-cals manufactured by Michigan hemical Corp.

IRRIGATION CONFERENCES

DAVIS, CAL. — The Intersociety Conference on Irrigation and Drain-ge is set for April 29-30 in San rancisco—the first of three big vents concerned with the vital sub-ect of water in agriculture. Immedi-tely following the Intersociety Con-erence, the Third Congress of the In-ernational Commission on Irrigation nd Drainage (a UN-sponsored or-anization) will convene in San Fran-isco for a four-day session. Some 500 elegates representing 32 nations are xpected to attend the Congress. For he third big event in this series, the cene shifts to the University's Davis ampus. There—on May 7-9—a giant emonstration of modern irrigation quipment and techniques will be resented.

Commercial Solvents Votes Merger With Thermatomic Carbon

BALTIMORE — Commercial Solvents Corp. stockholders approved the merger of Thermatomic Carbon Co. into CSC at their 38th annual meeting here April 4. Thermatomic's stockholders, at a meeting on April 2, 1957, approved the merger, which calls for an exchange of 18 shares of CSC stock for each share of Thermatomic. Commercial Solvents has managed Thermatomic, a manufacturer of thermal carbon blacks, since 1931 and holds approximately 68% interest in that company.

J. Albert Woods, president of Commercial Solvents, informed stockholders that the company's $10,000,000 plant expansion program started last year will be completed on schedule during the last half of 1957. He said that part of this expansion, at the Sterlington, La., plant, will increase the company's methanol production by one-third. Among other projects in the expansion program is a new plant at Terre Haute, Ind., for the upgrading of CSC basic industrial chemicals to additional chemical derivatives.

Net sales for 1956 were $58,745,254 as compared with $56,623,754 for 1955. Earnings before extraordinary items in 1956 were $3,163,307 or $1.20 per share of common stock. This compares with $3.138,864 or $1.19 per share in 1955. Net earnings in 1956, after extraordinary items, were $2,-830,591 or $1.07 per share as compared with $3,451,813 or $1.31 per share in 1955.

Dividends of $1 per share, totaling $2,636,878, were paid on the common stock during 1956. Inventories at the year's end were $13,263,811 as compared with $12,908,336 for 1955. Working capital at the year's end was adequate, Mr. Woods said.

Mr. Woods informed the stockholders that initial reports on 1957 first quarter business indicated further expansion of CSC's industrial chemicals sales, which reached record levels last year. Biochemicals operations also appear to be headed for further improvement, he said. Sales of agricultural chemicals continue to reflect soft market conditions resulting from last year's industry-wide price reductions and increases in freight rates and distribution costs, Mr. Woods said.

Northwest Nitro-Chemicals, Ltd., the Canadian agricultural chemicals operation in which CSC has a 42 7% interest, is now producing a full range of mixed fertilizers at its new $22,-000,000 plant in Medicine Hat, Alberta, Canada. Production of ammonium nitrate and ammonium phosphate fertilizers began in late 1956. CSC operates the company under a long term management contract.

New Olin Mathieson Plant Begins Production

PASADENA, TEXAS—Olin Mathieson Chemical Corp. has announced that its new sodium silicofluoride plant is in full production. Adjoining the firm's high-analysis Ammo-Phos fertilizer plant of its Plant Food Div., the new unit recovers fluorides from phosphoric acid made here. The announcement was made by Sam L. Nevins, vice president.

Sodium silicofluoride is used as an ingredient in insecticides and in certain industrial chemical applications.

TVA Sells Site

KNOXVILLE — An industrial site near Mobile, Ala., originally purchased during World War II by Tennessee Valley Authority as the site of a fertilizer plant, was sold recently at public auction for $125,000 to the Alabama State Dock Commission. TVA abandoned plans for constructing the plant some years ago.

Chipman Offers New Phosphate Pesticide

BOUND BROOK, N.J. — Chipman Chemical Co. has announced a new organic phosphate pesticide, "Tetram 75," said to be effective for control of mites on cotton and deciduous fruit, as well as spider mites, rust mites and certain other insects. It is a granular material, soluble in water, for use as a spray.

The material has been tested under a wide range of conditions in the U.S., England, and other areas. The makers report that as little as three ounces of the product on an acre of cotton can control spider mites for an entire season. They indicate further that the material is non-phytotoxic and is relatively harmless to predator insects.

Chipman states that although the product is poisonous, a temporary tolerance for its use has been granted by the Food and Drug Administration. The company has applied for a permanent tolerance which would permit unrestricted use of Tetram 75 on cotton. Temporary tolerances for other crops is also being sought by the makers.

The product is a product of Plant Protection, Ltd., a subsidiary of Imperial Chemical Industries, Ltd., London, England. It is being introduced and developed in the U.S. by Chipman Chemical Co., Bound Brook, N.J. Supplies for experimental purposes are available on request from the company, it is stated.

New Mexico Firm Specializes in Lawn, Garden Fertilizers

BELEN, N.M. — A new fertilizer firm—known as the Desert Green Corp.—is now making its first shipments to New Mexico customers. It is owned jointly by David A. Gaunt of Albuquerque, who is in charge of sales, and Joe S. Sanchez of Belen, plant manager.

The firm is specializing in lawn and garden fertilizers, formulated for Southwestern soils. Potash, superphosphate, a nitrogen compound and an iron and sulphur mineral mixture are being mixed with a base of aged heat-treated steer manure. Mixing and packaging are handled at the firm's new plant, one and a half miles south of Belen. The plant's 60-ton capacity will eventually be increased to 100 tons a day, Mr. Gaunt says. The equipment was installed by the Hogan Mill Machine Co. of Jefferson City, Mo.

Several other products bearing the Desert Green label are planned, Mr. Gaunt says. Within a year, the firm will process livestock and poultry feed at the plant. Mr. Gaunt is also owner of the Heights Nurseries in Albuquerque.

GARDEN SUPPLY SHOW

PORTLAND, ORE. — The seventh annual Northwest Garden Supply Trade show of the Oregon Feed and Seed Dealers Assn., will be held Oct. 29 and 30, in the Grand Ballroom of the Portland Masonic Temple.

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INSECT AND PLANT DISEASE NOTES

Fewer Corn Borers Found in Maryland Fields

COLLEGE PARK, MD.—Counts of corn borers in broken cornstalks on the ground along the Eastern Shore showed fewer borers to the acre than were counted last year. An average of only 40 was found compared to 9,600 last year. Owners of these fields had done a good clean job of plowing, it was observed.

The same cornstalks yielded an average of 53 southern cornstalk borers an acre in the same area during the survey.

A number of insects are found in hay crops. These include the alfalfa weevil, few adults of which were found in three fields inspected in Anne Arundel County where alfalfa was about 5 inches tall. However from 5% to over half of the stems were infested in these fields.—Theo. L. Bissell and W. C. Harding.

Spread of Alfalfa Weevil Noted in Virginia

BLACKSBURG, VA.—Alfalfa weevil larvae are throughout Virginia now, and damage to alfalfa is ranging from light to heavy, says Arthur P. Morris, associate entomologist at VPI.

In general, damage is heavy in the infested counties along the southern border, mixed light to heavy in eastern and central counties, and light in northern Virginia.

Sprays should be applied to alfalfa fields where most of the buds have more than token damage present and some of the buds are heavily damaged. This is particularly true where the plants are five inches or higher, he says.

Warnings have also gone out in Virginia against tobacco mosaic. S. B. Fenne, plant pathologist at VPI reports that mosaic caused as much as 25% loss in some counties and that tobacco growers in neighboring states, notably North Carolina, had suffered heavy losses from the disease.

Corn Stalks from Last Year Provide Borer Homes

NEWARK, DEL. — Entomologists making surveys in 1,800 fields in Delaware have reported that last year's corn stalks are still in most of these fields, which raises the assumption that numerous corn-damaging insects have overwintered in these areas. Counts were made in Sussex, Kent, and New Castle counties, with some 102 fields counted in a portion of Sussex County alone.

Estimates made by the entomologists indicate that in every acre of last year's corn stalks or stubble, there are now about 11,451 healthy corn borers in Sussex County; 10,892 in Kent; and 4,910 in New Castle.

California Starts War Against Spotted Aphid

BERKELEY, CAL.—A cooperative effort between alfalfa growers and University of California researchers is aimed at conquering the spotted alfalfa aphid which has caused $25 million worth of damage since it made its first appearance in the state three years ago.

The immediate goal of the project is to find out what combination of circumstances—such as weather, natural enemies, diseases, habits of the pest, and growth of the alfalfa—control the increases and decreases of the aphid population in the fields. The University has selected more than 30 fields throughout the state for this study.

The fields in 7 northern counties are checked by Ray F. Smith, associate professor of entomology, Berkeley; and Kenneth S. Hagen, assistant entomologist, biological control, Albany field station. Fields in 5 southern counties are supervised by Robert van den Bosch, assistant entomologist, Biological Control, Riverside.

"Checks and insect counts are made twice a month throughout the year, and weekly during the summer," explains Mr. Smith. "But our efforts would be in vain without the daily weather reports we receive from the farmers who volunteered to assist in this basic study."

These farmers, he said, can make highly localized reports on "alfalfa weather" because the University weather observation stations are right in their alfalfa fields.

After the first year of this study it appears that no single cause is responsible for sudden increases of the pest population, but patterns as to dangerous combinations are beginning to emerge. The project is expected to last another two or three years; then it is hoped to have enough information so the pest can be controlled by a combination of letting their natural enemies do their work, use of chemicals, and harvesting the crop just before a major outbreak.

Pests Begin to Show In Georgia Fields

ATHENS, GA.—Light infestations of spotted alfalfa aphid have been reported in Sumter County, and moderate infestations of pea aphid were found on alfalfa in the same county.

The bean leaf beetle has been noted infesting beans in Brooks and Lowndes counties, to a moderate degree.

Light infestations of tobacco budworm have been found on tobacco in the field in Lowndes, Cook, Berrien and Atkinson counties; and moderate infestations in Appl Tattnall and Candler counties.

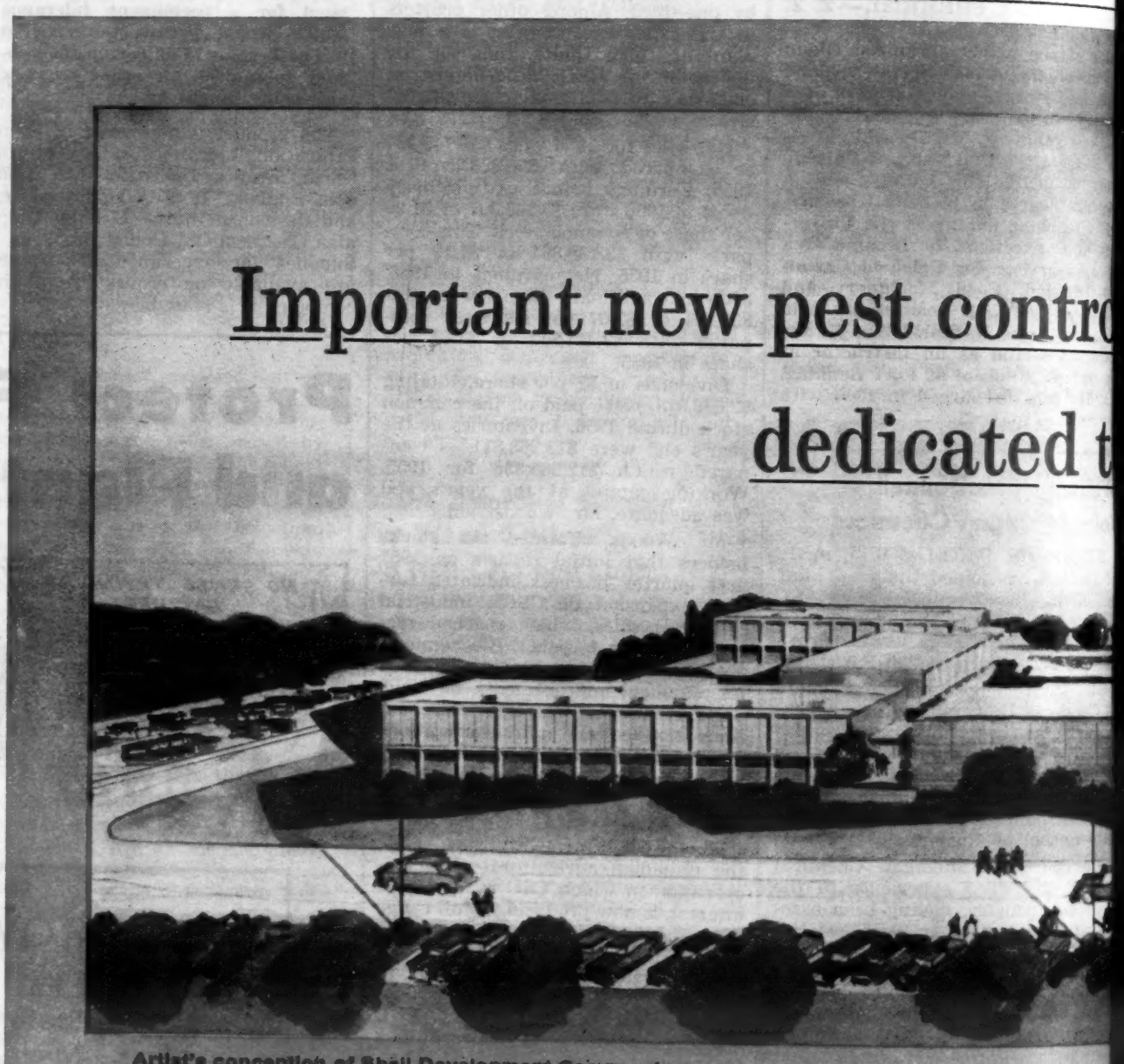
The tobacco flea beetle has seen in light infestations in Tift, quitt, Brooks, Lowndes and counties, with moderate number Berrien, Atkinson, Appling, Tatt and Candler counties.—W. C. J son.

Minnesota Becoming Mor Conscious of Nematodes

ST. PAUL, MINN.—Intensive search against nematodes is b launched at the University of Mi sota. The program is being condu by Donald P. Taylor, nematologi the department of plant patholog

There are some 40 species of ne todes in Minnesota, he reports. survey is to determine the exten damage to crops in Minnesota, to determine the nematode pop tions in the field and their effect specific crops.

Important new pest contro dedicated t



Artist's conception of Shell Development Company's expanded new Agricultural Research Center at Modesto, Calif.

To STRIKE more powerful blows against agriculture's worst enemy, crop-destroying insects, Shell Development Company is consolidating and expanding its research facilities at Modesto, California.

Upon completion in the fall of 1957, this agricultural research center will rank among the best equipped and most extensive privately maintained laboratories in the world. A staff of more than 100 will explore every aspect of pesticide research. The new laboratories will be composed of three specialized divisions: Biological Research, Chemical Research, and Product Application.

The research facilities also include a well-established 142-acre experimental farm on which major economic

EGETABLE ACRES

(Continued from page 1)

carrots and green peppers. ver, an increase for spring cel- tput is indicated. Spring canta- production is forecast as down from 1956.

etting the inference of any re- n in pesticide use, even should estimates go wrong, is the pos- marked increase in late spring agus, onions and watermelons.

Hitchner informed Croplife n his experience, a reduction of nagnitude — merely an overall would hardly be shown in the idal chemical sales barometer.

was his opinion that such a re- ion was so small that it did not consideration, but he added he affirmative side that while was such a slight reduction, good producers would use t their normal volume of pesti- cidal chemicals to make certain that their planted acreage was saved for markets. The intimation was that when production falls, is the time when pesticidal chemicals prove themselves in making possible the marketing of more of the crop.

The USDA report backs up Mr. Hitchner's observations.

It notes that rains in Florida kept soil too wet for plant growth and caused leaching of fertilizer and lowered the vitality of the plants. This condition should indicate the need of better than normal protection of the surviving plants from pests.

Here are some additional items which lend encouragement to the pesticidal chemical industry this year:

Peach crop prospects on April 1, for the southern states, are the best in four years—an indicator that growers will probably extend their best efforts to sustain this condition.

Freeze damage to fruits and vegetables was generally light during their most important producing season, again indicating that any loss in acreage should be offset by the attention producers will give to bringing through their full acreage with a minimum loss of pest damage.

Opening of Bids Scheduled for Sale Of Phosphate Lease

SALT LAKE CITY, UTAH — The U.S. Bureau of Land Management will open bids April 17 for sale of a phosphate lease on 184 acres of land six miles northeast of Randolph, Rich County, Utah.

According to Ernest E. House, manager, the sealed bids will be opened at 1 p.m. in the land office in the federal building in Salt Lake City.

A similar sale will be held the same day in Cheyenne, Wyo., for a lease on the same phosphate deposit which continues into Lincoln County, Wyo.

Minnesota Branch Of Midwest Soil Committee Formed

MINNEAPOLIS — The Minnesota branch of the Middle West Soil Improvement Committee was launched at a meeting here April 9, attended by 24 industry representatives.

M. M. Mawhinney, Smith-Douglass Co., Albert Lea, Minn., chairman, said that one of its main purposes would be to serve as a liaison group for the manufacturer, dealer, the university and the consumer in presenting information that will mean more profit for those who use fertilizer.

Named to an executive group for the new organization were Mr. Mawhinney; Ralph Willits, Spencer Chemical Co., Minneapolis; O. J. Arlien, Minnesota Farm Bureau Service Co., St. Paul; John M. Coates, International Minerals & Chemical Corp., Mason City, Iowa; Richard Fancher, Welcome Agricultural Chemical Co., Welcome; Dr. William P. Martin, head of the department of soils, University of Minnesota; R. E. Bergman, Minnesota feed and fertilizer control official, St. Paul; Z. H. Beers, executive secretary, Middle West Soil Improvement Committee, Chicago; and representatives of Croplife and the Farmer magazine of St. Paul.

One project was approved and another was put on the agenda for the next session. Approved was a program of demonstration plots for corn, soybeans and pasture.

Each member company of the group will be asked to have six plots. Ground rules for conducting the plots will be suggested by the University of Minnesota soils department.

Another suggested project was establishment of a soybean yield club, with a goal of perhaps 40 bu. an acre, but this was laid over for further discussions at a later meeting.

Mr. Beers told the group that in promoting the products the industry has for sale, a better job can be done if everyone tells basically the same story about fertilizer. He said that the universities, publications, state departments of agriculture and individual companies are looking for an information program "to which we all can tie to and which has for its aim service to consumers."

Mr. Beers said that the new group might wish to act as a clearing house for a program of demonstration plots. He said that if results of such plots were pooled at the end of a year the work of one firm would be multiplied by that of all others. He also said that the Middle West Soil Improvement Committee would look to the group for ideas.

Formation of the Minnesota organization is a pioneering effort for MWSIC in forming a state group, Mr. Beers said.

Dr. Martin and Dr. A. C. Caldwell, University of Minnesota department of soils, told briefly of areas of university soils work with which the new group might lend a hand. Mr. Bergman said that in his control work he needed help and guidance that could only be given by such an organization.

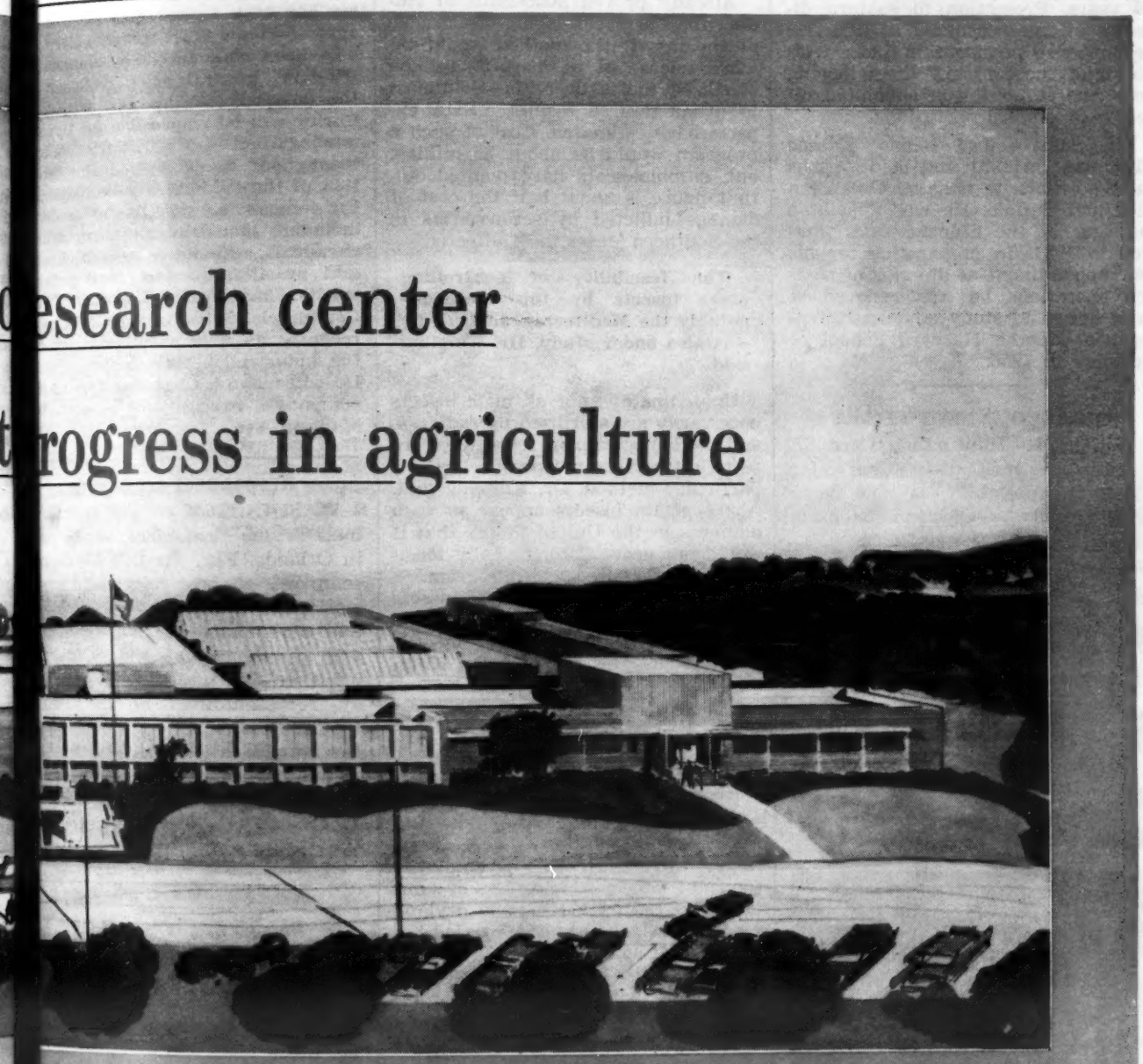
Members of the executive group will meet at 11 a.m. April 23 at Dr. Martin's office.

New Office

STAMFORD, CONN.—Dorr-Oliver Inc. announces the opening of a new office at 5356 Keeport Drive, Pittsburgh 36, Pa. Richard M. Sibley of the eastern industrial division has been transferred from Stamford, Conn. to the new office. A native of Brooklyn, New York, he received a B.S. in chemical engineering from Pennsylvania State University in 1947 and an M.S. in chemical engineering from Purdue in 1949.

esearch center

rogress in agriculture



crops are grown. This enables Shell researchers to conduct preliminary field tests for the development of new pesticides under actual farming conditions.

Successful pesticides now available from Shell Chemical Corporation include aldrin, dieldrin, endrin, Phosdrin* insecticides; allyl alcohol weed seed killer; D-D® and Nemagon* soil fumigants. With the addition of the Modesto center, Shell looks forward to the development of better pesticides for even more effective control.

This is one of many ways that Shell Chemical Corporation is helping to build a better tomorrow for agriculture and industry through chemical research today.

*Shell Chemical Trademark

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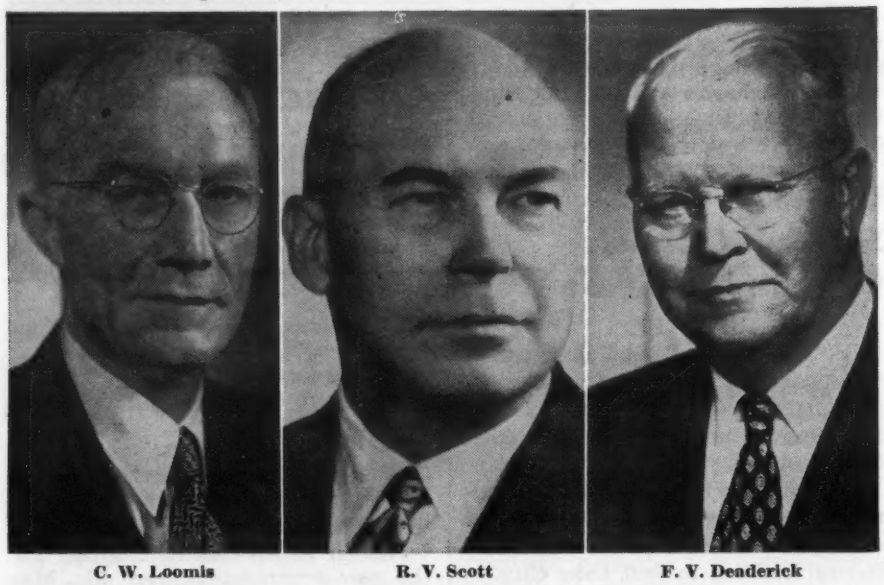

C. W. Loomis | R. V. Scott | F. V. Deaderick

Bemis Announces Management Changes

ST. LOUIS—The retirement of C. W. Loomis, vice president, company director and director of personnel, has been announced by F. G. Bemis, president of the Bemis Bro. Bag Co. Mr. Loomis will be succeeded by F. V. Deaderick, presently vice president, director of eastern operations and also a company director. Replacing Mr. Deaderick is R. V. Scott, former manager of the Chicago general sales division.

Mr. Loomis joined the firm's Boston office in 1916 and became personal assistant to A. F. Bemis, then president, in 1919. He held subsequent positions in the engineering, sales and specialty departments, and in 1924 was put in charge of the Detroit sales office. Appointment as manager of the Bemis plant in Memphis came in 1931, a post he held until coming to St. Louis in 1947 as director of personnel. He was elected vice president in 1949 and a company director in 1952.

Mr. Deaderick came to Bemis in 1918 as a clerk in the St. Louis office. He served as a city salesman and office manager prior to appointment in 1927 as manager of Bemis' Houston plant, a position he held for 24 years. Promotion to eastern director of sales occurred in 1951. He became vice president in 1952, a director of the company the following year and in 1954 was appointed director of eastern operations.

Mr. Scott joined Bemis' Kansas City plant in 1931 and held various sales positions in Omaha, Oklahoma City and Buffalo. He was appointed manager of the Chicago sales division in 1951. In preparation for his new appointment as director of eastern operations he was relieved of sales duties to study advanced management at the Harvard School of Business in 1956.

TOBACCO INSECT CHART

CLEMSON—Information Card 82, Tobacco Insect Control Chart for South Carolina 1957, is now being distributed by the Clemson Extension Service.

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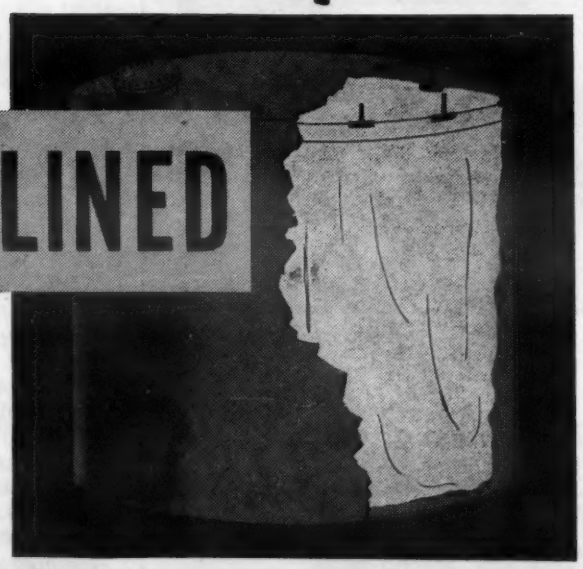

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Control of Screwworm Through Sterilization Seen by USDA Official

CHARLESTON, S.C.—Control of the screwworm fly through sterilization of males of the species is envisioned by Dr. E. F. Knipling, chief of the entomological research division of the U.S. Department of Agriculture.

Speaking in Charleston to the South Carolina Entomological Society, Dr. Knipling said a control program throughout the Southeast and Southwest might be feasible in the "foreseeable future."

The program would involve mass sterilization of male screwworms by gamma ray radiation, and release of the insects over the area to be controlled.

Since the female of the species mates but once, mating with sterilized males would produce infertile eggs and a consequent whittling of the insect population.

Already proved successful in ridding the Caribbean island of Curacao of the insect, the method would require release of at least 50 million sterilized males over the Southeast to attain desired results, USDA experts have estimated. Cost of such a program would be about $5 million, but, entomologists have pointed out, that figure is about half the cost of damage inflicted by screwworms in the Southern states most affected.

The feasibility of controlling other insects by this method—notably the Mediterranean fruit fly—is also under study, Dr. Knipling said.

Unfortunately, not all male insects necessarily are sterilized by radiation and the biological control of these insects is therefore not possible by this particular method, Dr. Knipling said. Also, certain insects appear in such numbers in the United States that it would not prove "economically feasible" to undertake such a program.

Should biological control of insects be undertaken, the project would doubtless by a joint effort by the USDA and states involved, Dr. Knipling said.

Field Station Head Plans Retirement

BIG SPRING, TEXAS—After 35 years as superintendent of the Big Spring Field Station, Fred E. Keating is retiring. He will be employed for some time yet, however, in summarizing and evaluating the dryland research which he has carried on during that span of years.

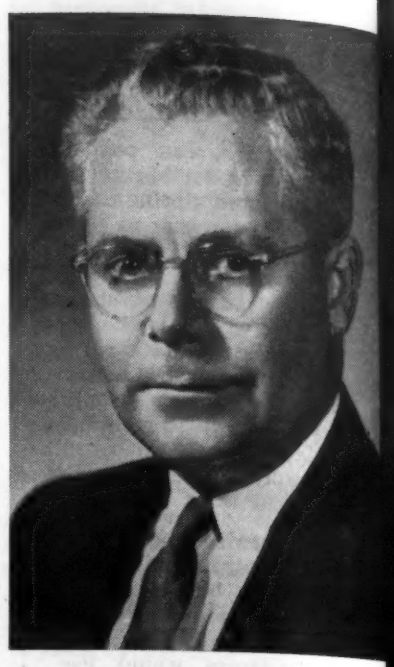
Mr. Keating has continuously experimented with dryland crop rotations, and will have some interesting facts on the amount of plant food taken out by various plants.

The new superintendent will be Dr. Earl Burnet, who has been associate agronomist at the Texas Agricultural Experiment Station at Spur, Texas since 1951. He is a graduate of Texas Tech, and took his doctorate in soils at Ohio State University in 1952. He is a recognized authority on soil management, moisture conservation and wind erosion control.

Yields in Texas Area

COLLEGE STATION, TEXAS—Corn production on the sandy soils of the Gulf Coast of Texas can be profitable when good management and fertility practices are used, Texas A&M tests show. Results of several years of fertility studies indicate that well-fertilized corn will produce an average annual yield of more than 60 bu. per acre.

To obtain this yield, a balanced fertilizer, supplying 60 pounds each of N, P_2O_5 and K_2O per acre, is recommended. The nitrogen should be applied in split applications with half at or before planting and the rest as a sidedressing when the corn is about 5 weeks old.



James A. Farley

IN NEW CSC POST—James A. Farley has been named field sales manager of Commercial Solvents Corp., has been announced by James O'Leary, general sales manager of the company. In his new post, Mr. Farley will be responsible for the administration of CSC district offices throughout the U.S., and the direction of the field sales force, handling the company's entire line of products including industrial and agricultural chemicals, automotive specialties, animal nutrition products and potable spirits. Mr. Farley has been with Commercial Solvents since 1935, most recently as field sales manager for the industrial chemicals department. He will make his headquarters at the company's executive offices at 260 Madison Ave., New York City.

RESEARCH MEETING

WASHINGTON — The tenth annual Tri-lab Conference will be held in Orlando, Fla., April 24-25. Representatives of three government agencies will make plans for research and development work in the control of insects of public health significance. The meetings are attended by representatives of the Public Health Service, U.S. Department of Health, Education and Welfare; the Agricultural Research Service, U.S. Department of Agriculture; and TVA.

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MEETING MEMOS

g. 13-14—Ohio Pesticide Institute, Summer Meeting, Ohio Agricultural Experiment Station, Wooster, Ohio, J. D. Wilson, Ohio Agricultural Experiment Station, Secretary.

g. 14—Connecticut Agricultural Experiment Station Field Day, Mt. Carmel, Conn. Dr. James G. Horsfall, New Haven, director.

t. 29-30—Seventh Annual Northwest Garden Supply Trade Show of Oregon Feed & Seed Dealers Assn., Portland, Ore. Masonic Temple.

1958

b. 13-14—Agronomists-Industry Joint Meeting, Edgewater Beach Hotel, Chicago, sponsored by the Middle West Soil Improvement Committee, Z. H. Beers, 228 N. LaSalle St., Chicago 1, Ill., Executive Secretary.

EDITOR'S NOTE—The listings bove are appearing in this column r the first time this week.

pril 29-May 1—Pacific Northwest Pest Control Operators Assn., New Heathman Hotel, Portland, Ore.

ay 17-18—School for Chemical Analysts in Industry and State Laboratories, Purdue University, Lafayette, Ind. Sponsored by National Plant Food Institute.

ay 13-15—Carolinas-Virginia Pesticide Formulators Assn., Third Annual Spring Convention, Cavalier Hotel, Virginia Beach, Va., W. R. Peele, Raleigh, N.C., Secretary-Treasurer.

ay 14—Tour of Pacific Northwest Plant Food Assn. Farm Demonstration Project at Hillsboro, Ore.

ay 19-21—Florida Seedsmen's Assn., Roney Plaza Hotel, Miami Beach, Fla.

ay 20-21—National Cottonseed Products Assn., 61st Annual Convention, Shoreham Hotel, Washington, D.C.

ay 20-22—Chemical Specialties Manufacturers Assn., Drake Hotel, Chicago.

une 6-8—Manufacturing Chemists Assn., Annual Meeting, Greenbrier Hotel, White Sulphur Springs, W.Va.

une 9-12—National Plant Food Institute, annual meeting, Greenbrier Hotel, White Sulphur Springs, W. Va.

une 17-19—Fifteenth Annual Convention of the Association of Southern Feed and Fertilizer Control Officials, Dinkler-Tutwiler Hotel, Birmingham, Ala., Bruce Poundstone, Kentucky Agricultural Experiment Station, Lexington, Ky., Secretary-Treasurer.

une 23-26—American Society of Agricultural Engineers, Golden Anniversary meeting, Michigan State University, East Lansing, Mich.

une 26-28—Eighth Annual Fertilizer Conference of the Pacific Northwest, Benson Hotel, Portland, Ore. B. R. Bertramson, Washington State College, Pullman, Wash., chairman.

uly 4-5—Alabama Seedsmen's Assn., Battle House, Mobile, Ala.

uly 10-14—Plant Food Producers of Eastern Canada, Manoir Richelieu, Murray Bay, Quebec.

uly 17-19—Southwestern Fertilizer Conference and Grade Hearing, Galvaz Hotel, Galveston, Texas.

Sept. 5-6—Great Lakes States Anhydrous Ammonia Meeting, Michigan State University, East Lansing, Mich.

Sept. 8-15—International Congress of Crop Protection, Hamburg, Germany.

Oct. 2-4—Eleventh annual Beltwide Cotton Mechanization Conference, Shreveport, La.

Oct. 3-5—Pacific Northwest Plant Food Assn., Annual Convention, Sun Valley, Idaho, Leon S. Jackson, Lewis Bldg., Portland 4, Ore., Secretary.

Oct. 14—Sixth Annual Sales Clinic of the Salesmen's Assn., American Chemical Society, Hotel Roosevelt, New York.

Oct. 17—Conference on Chemical Control Procedures for Industry Chemical Control Analysts, Shoreham Hotel, Washington, D.C. Sponsored by National Plant Food Institute.

Nov. 3-5—California Fertilizer Assn. 34th Annual Convention, St. Francis Hotel, San Francisco. Sidney H. Bierly, General Manager, 475 Huntington Drive, San Marino 9, Cal.

Nov. 6-8—Fertilizer Industry Round Table, Sheraton Park Hotel, Washington, D.C.

Dec. 1-3—Southern Seedsmen's Assn., Jung Hotel, New Orleans.

Dec. 11-13—Agricultural Ammonia Institute, Seventh Annual Meeting, Hotel Marion, Little Rock, Ark., Jack F. Criswell, Claridge Hotel, Memphis, Executive Vice President.

1958

Jan. 7-8—Texas Fertilizer Conference, Texas A&M, College Station, Texas.

Jan. 13-15, 1958—Weed Society of America and Southern Weed Conference, Joint meeting. Peabody Hotel, Memphis, Tenn.

Jan. 21-23—California Weed Conference, San Jose, Cal.

March 4-5—Western Cotton Production Conference, Hotel Cortez, El Paso, Texas, Conference Sponsored by the National Cotton Council and the Five State Cotton Growers Assn.

GIANT FOXTAIL THREAT

LAFAYETTE, IND. — Giant foxtail, spreading in an east-north easterly direction across Indiana, is becoming one of the state's most serious weed threats. O. C. Lee, Purdue University extension botanist, says the greatest infestation is in western Indiana, not far from the Indiana-Illinois state line. Most of the infestations currently are confined to patches in fields, fence rows and along highways. But in a few locations, the weed has spread to cover entire fields.

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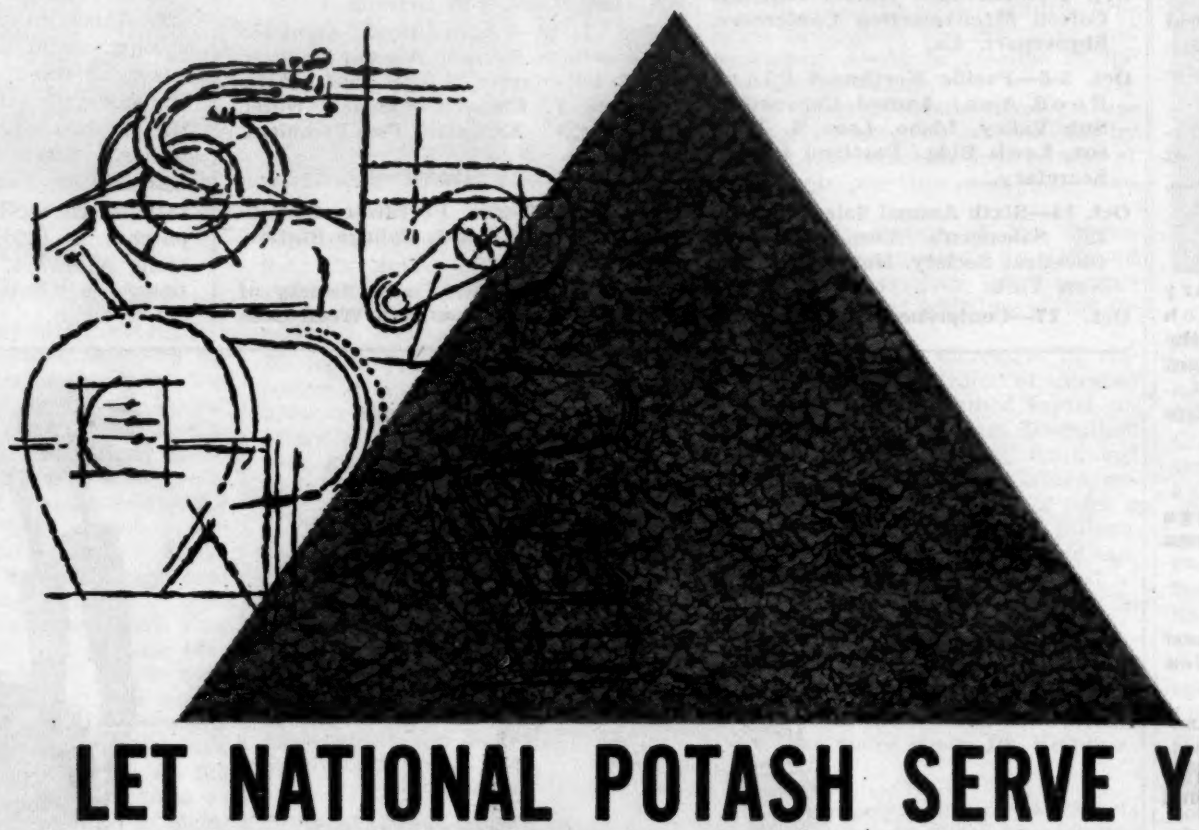

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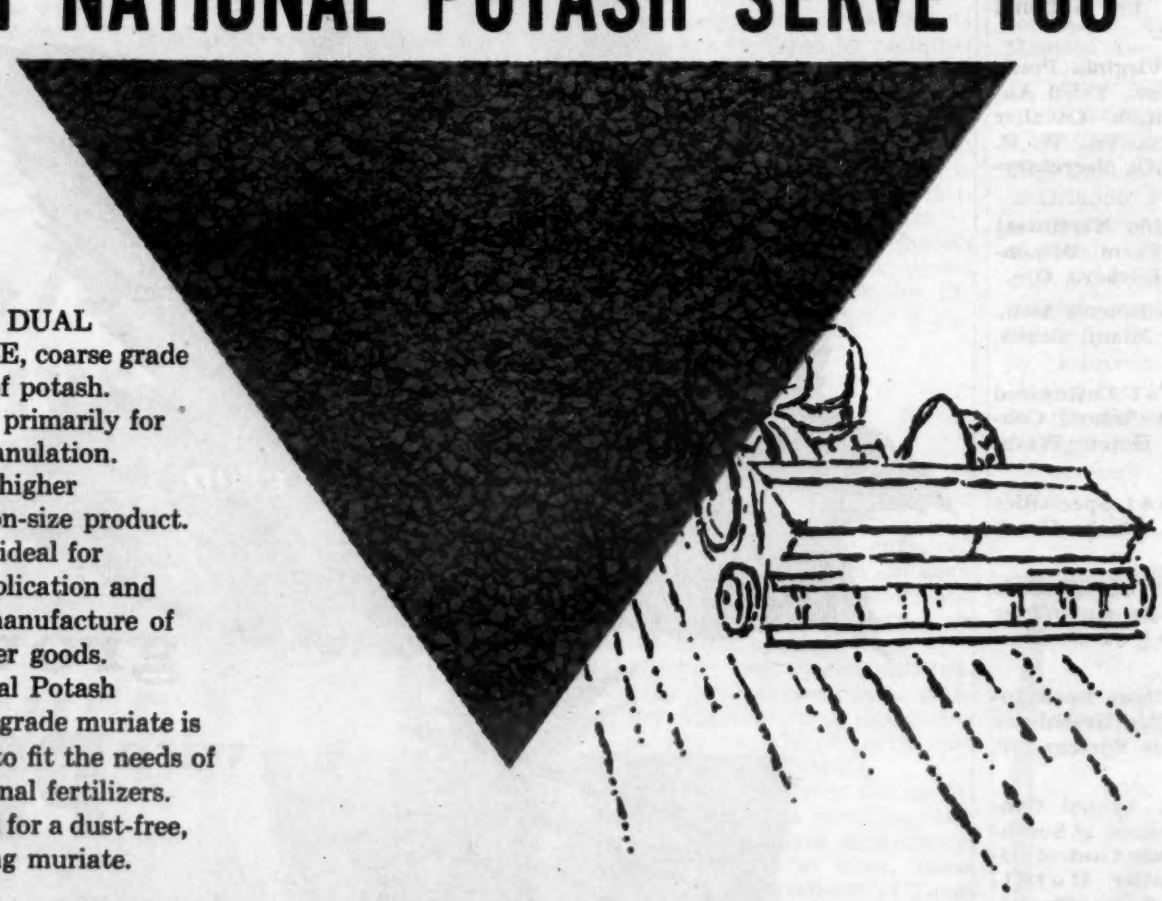

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Special Merchandising Section

Better Selling

Marketing News and Features

By RAYMOND ROSSON
County Agent, Washington County, Tenn.

Being a county agent is a very interesting occupation, and it grows more interesting when the dealers in his county cooperate fully in advising farmers what fertilizers and insecticides to use in the production of better crops and livestock.

We have discussed it so many times in our county until the dealers and extension workers are practically together in our recommendations to our farmers. In fact, many of our better farmers have gone beyond the recommendations of the experiment stations, and believe it or not, it is paying them well.

Take corn for instance. We only plant some 11,000 acres to corn in the entire county, and the better farmers expect to produce anywhere from 75 to 150 bu. per acre. They know, and the dealers know, that it takes a lot of plant food to produce 50 bu. corn on an acre in Tennessee.

Just the other day a dealer called me and said, "I had a dairyman in my store and he was asking about fertilizing his pasture of orchard grass and ladino clover. I suggested using 500 lb. of 5-10-15 per acre." I told him, "You were on the ball, and I know many farmers using that much and some even applied as much as 1,000 lb. per acre and it is paying them."

I've seen the average production of tobacco go from 900 lb. per acre to 2,000 lb. production and some yields are as high as 3,000 lb. So, at 60¢ per pound these yields make tobacco a mighty good money crop.

I think I can see many corn farmers reducing their acreage; increasing their fertilizer applications and producing more corn than they did before reducing acreage. Dealers: Remember, plant food at its price today is the best buy for farmers.

Crag Mylone Granted Label Acceptance

NEW YORK—Crag Mylone, a new soil fumigant, has been granted label acceptance by the U.S. Department of Agriculture for use as a pre-planting control of weeds, nematodes, and soil fungi in ornamental propagating beds.

The label provides directions for using Crag Mylone as a pre-planting treatment on beds for azaleas, camellias, chrysanthemums, euonymus, forsythia, gardenias, juniper, pansies, rhododendron and taxus.

The chemical is manufactured by Carbide and Carbon Chemicals Co., a Division of Union Carbide and Carbon Corp. It is also being used experimentally on tobacco, vegetable and forest-tree seed beds, and on turf.

Improving Personal Selling in Small Business

By Donald F. Mulvihill
Professor of Marketing, University of Alabama

The impression a customer gets from a salesperson is the impression which that customer has of the whole enterprise. Moreover, the attitude and actions of a salesperson can easily cancel the previous promotional efforts which led to the customer's visit. It is essential, therefore, that the customers be treated in a way which results in purchases suited to their wants.

If you look closely at your own business, chances are you will find evidence that some improvement could be made in personal selling.

You will probably find, also, that it is largely up to you to provide the impetus for that improvement. Accordingly, you will want to have a clear idea of what should be done by your salespeople and what should be done by you, the owner or manager. Take your selling employees first.

Some salespeople can get customers to buy new tires when they came in only for an air pressure gauge, or a new stove when all they thought they wanted was a baking pan. The problem is that most salespeople don't come anywhere near doing that sort of thing. This is a problem which owners and managers of small firms have to face, week in and week out. Very often businessmen wish they knew more about what it takes to improve the quality of personal selling. One place to start in getting this knowledge is to take a look at the basic ingredients involved.

CHANGING CONCEPTS: Back in the 1920's the phrase "natural salesman" was common. In the following decade the ideas of psychological research, education, and training came to replace the concept of "natural" selling skill. Then, during World War II, the key to retail salesmanship was often simply having the item to sell.

Modern studies of expert salespeople, however, indicate that top sellers can develop in even the smallest firm—without lengthy training programs, and without depending upon complicated research or expensive staff specialists. Personal selling proficiency can be self-taught through constant, on-the-job practice. For this to take place, three elements are needed: a customer-centered attitude, an appreciation of the importance of certain basic, personal-selling skills, and an administrative climate which encourages improvement.

CUSTOMER-CENTERED ATTITUDE: Consciously or unconsciously, an able salesperson starts off with his interest and thinking focused primarily on the customer—rather than on the company, on the product, or on himself. The desire to understand the customer's behavior and wants is essential.

● **Differences in people.**—There is little argument with the idea, that people are different. But actually, many of the differences exist in how people go about getting what they want, rather than in their basic needs. When Miss Small, a salesperson, sees Mr. Trask, a potential customer, as "stubborn and stupid" it is usually very hard for Miss Small to recognize any valid reason for Trask's acting as he does. She believes "he's impossible." Nevertheless, if Miss Small is to sell to Mr. Trask, she must come to accept his behavior as a fact—even if it differs from her ideas of what he ought to do or say.

● **The right "wave length."**—To improve personal selling, your salespeople have to get on the customer's wave length. Doing this requires that they look at the customer as, perhaps, a kind of storeroom with all his past experiences packed away inside. These experiences account for his behavior, viewpoint, and feelings. When, instead of the "impossible" idea, a salesperson substitutes the "storeroom" approach, there is less tendency to blame a customer for being "difficult," and more success in discovering what to him is important. Once a seller knows that, the chances of making a sale are already better.

● **Basic desires.**—Although the forces which make people what they are can be complex, certain basic desires are common to almost everybody. Two of them are: Inner self-confidence, and recognition. When a

(Continued on page 12)

THE AUTHOR'S SUMMARY

Many books and articles have been written on how to succeed as a salesman. But few, if any, highlight effectively for small business owners and managers the fundamentals of improving personal selling. This article (prepared for the Small Business Administration, Washington) seeks to fill that gap. Worthwhile improvement can be made in even the smallest concern without costly research or long training courses. Three elements are needed: A customer-centered attitude, an appreciation of the importance of certain basic personal-selling skills, and an administrative climate which encourages improvement. The customer-centered attitude implies that the salesperson accepts and tries to understand the customer's behavior in the selling situation. Basic personal-selling skills can be self-taught by practice on the job in such tasks as displaying merchandise and supplying facts. An administrative climate which encourages improvement depends upon the boss. To achieve it, the top man must maintain ethical standards in his firm and must set a favorable tone in his organization as a social group. In addition, he should keep his people informed, emphasize looking to the future rather than dwelling upon the past, meet preconceptions with objective investigation, and allow opportunities for people to make mistakes from which they can learn.

SHOP TALK

OVER THE COUNTER

By Emmet J. Hoffman
Croplife Marketing Editor

The present time has been called an era of salesmanship. Certainly, farm chemical dealers wouldn't be in business if they didn't sell, sell, sell. How often do you sit down and think to yourself, "What can I do to stimulate more sales?"

Maybe you have four or six employees, depending on the volume of business you do. You pay these men a weekly wage and in your management program you rely on them to be men enough to earn that wage.

Perhaps, too, you figure that if you make a profit, you tell your men that if everyone sells a lot of merchandise, you'll declare a bonus at the end of the year, based on earnings. Fine and good, but the end of the year looks mighty far away to some employees. They may forget that promise of a bonus on many days when they don't feel like working hard.

As you look over your employees, whatever their number, you may sometimes wish you could unlock the initiative of which every man has a certain amount. Well, some large organizations, as well as some medium sized firms are doing it through an easy psychological process.

One merchant, who was paying his average employee about $60 per week, started a new system whenever he hired a new employee. Instead of paying the new men $60 per week, he guaranteed them a $50 weekly wage, plus 2% on all sales they made.

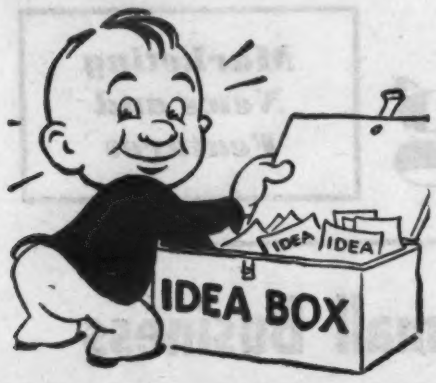
At first there was considerable grumbling by new employees about this method of paying. And the older employees who were getting $60 per week chuckled, for they thought they had the better of it by far.

Within a few weeks a couple of the new men who received only $50 per week guaranteed pay began selling $1,000 worth of merchandise and more per week. Based on a 2% commission on all sales, plus a regular salary, these new men began to average $70 and more per week.

News of this quickly got around to all the employees. They began to keep track of their own sales for several weeks. Some saw that with a little more sales effort they could sell $1,000 worth of merchandise and service per week and so could make $70 a week also. So one by one they approached the owner and asked for the same salary and commission basis that the new men were getting.

The owner was very pleased. This is what he wanted in the first place. With all his men now on salary and commission he witnessed a much deeper and more sustained interest in sales. His men were more alert,

(Continued on page 15)



What's New...

In Products, Services, Literature

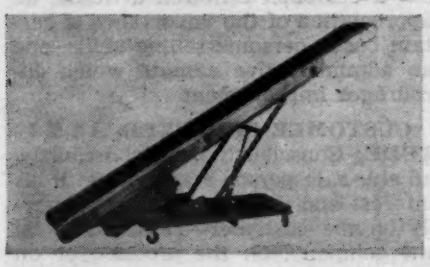
You will find it simple to obtain additional information about the new products, new services and new literature described in this department. Here's all you have to do: (1) Clip out the entire coupon and return address card in the lower outside corner of this page. (2) Circle the number of the item on which you desire more information. Fill in your name, your company's name and your address. (3) Fold the clip-out over double, with the return address portion on the outside. (4) Fasten the two edges together with a staple, cellophane tape or glue, whichever is handiest. (5) Drop in any mail box. That's all you do. We'll pay the postage. You can, of course, use your own envelope or paste the coupon on the back of a government postcard if you prefer.

No. 6561—Nursery Weed Control Folder

A new folder with 15 questions and answers about the use of the herbicide, Crag Sesone, on nursery plants has been issued by Carbide & Carbon Chemicals Co., a division of Union Carbide & Carbon Corp. The folder gives reasons why nurserymen should use Sesone, formerly called Herbicide-1, for weed control on nursery stock, and are told how and when to apply the spray. Irrigation, spray equipment and the various plants for which the product is recommended are also discussed. To secure the folder check No. 6561 on the coupon and mail it to Croplife.

No. 5672—Bag Conveyor

A new aluminum bag conveyor is being offered by the Burrows Equipment Co. The Burrows "A-Series" conveyor is made of heavy gauge aluminum alloy and has a 12-in. three-ply "Rib-Flex" belt. It is available in lengths from 10 to 18 ft. The unit can be furnished with three different hydraulic lifts and is made to fold for quick storage in small areas. For further details check No. 5672 on the coupon and mail it to this publication.

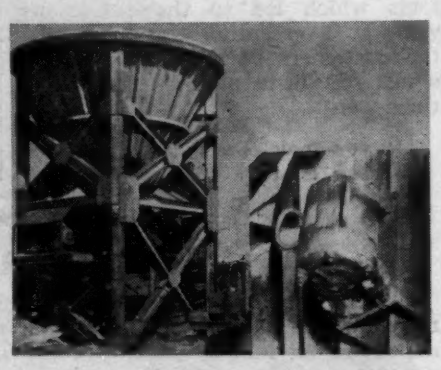


No. 6558—Folder on Rose Treatment

A new folder entitled, "Control Powdery Mildew on Roses With New Acti-dione PM," has been prepared by the Upjohn Co. Acti-dione PM is an antibiotic fungicide which is claimed to kill the existing growth of mildew. It can be applied with a hand sprayer or with a power sprayer at up to 400 lb. p.s.i. Contents of one package make 12½ to 25 gal. of spray depending on the treatment desired. The formula is compatible with a number of fungicides and insecticides but is not compatible with lime or other highly alkaline materials. Check No. 6558 on the coupon to secure complete details.

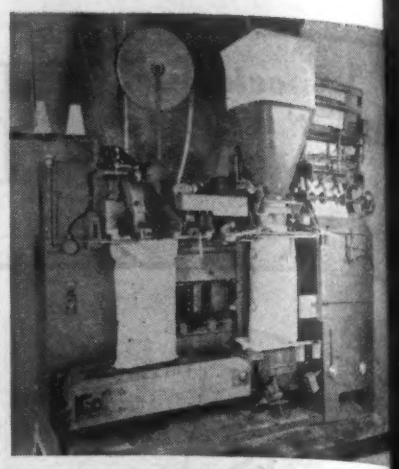
No. 6562—Vibrator

Type RC-50 vibrator, pictured here, is the model in use at the Davison Chemical Company's Bartow, Fla., plant and full details about its operation are available. The vibrator is designed so as to provide constant, forceful vibration of material in bins made of structural steel and plate iron. The vibrator operates on the rotating eccentric weight principle and is claimed to operate continually with a minimum of noise. A dust-proof housing is another feature of the company's line of electric vibrators. To secure complete details check No. 6562 on the coupon and mail it to Croplife.



No. 5670—Belt Treatment Folder

A folder on the "Talismanic" line of belt treatments has been prepared by the John C. Chambers Co. The company, according to the folder, has belt treatments for leather, rubber, canvas and rope drives. One treatment described is recommended for feed and flour mills, fertilizer plants and other plants where dusty conditions prevail. Other products described are special treatments for softening, preserving and cleaning. Secure the folder by checking No. 5670 on the coupon and mailing it to this publication.



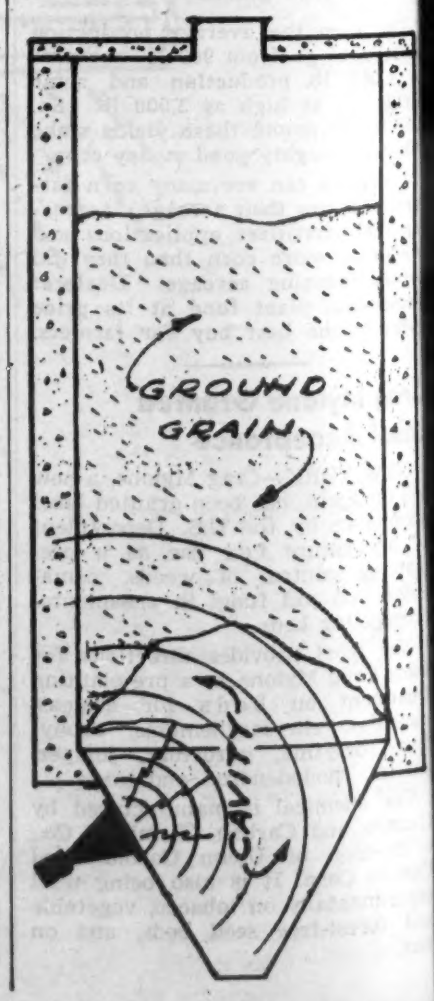
terials with auxiliary equipment, depending upon the characteristics of the materials. The company claims that "open mouth bags can be filled and closed automatically. The system provides accurate weights at a speed which matches or exceeds the production of most scales used in conjunction with open mouth packers. Bag closures are tight and accurate since the system provides for proper control of the gussets and the bag top at all times during filling and sewing." It is said that one man can handle three or more machines. From 6 to 12 bags per minute per packer can be handled, it is claimed. Secure complete details by checking No. 5673 on the coupon and mailing it to this publication.

No. 6551—Fungicidal Paint

Charles Bowman & Co. has prepared new literature on its product "Fungi-Chek," a non-toxic fungicidal vinyl latex paint that is said to produce a permanently bacteria-proof fungus-proof surface. It is recommended for plaster, fibre boards, concrete, metal or wood. A two-color brochure presents a list of micro-organisms against which the paint film is claimed to possess bactericidal and fungicidal properties. Copies of the literature are available by checking No. 6551 on the coupon and mailing it to this publication.

No. 5680—Unbridging Bins

The Sonic Flo is the trade name for a device for unbridging bins. The product, made by the J C L Engineering Co., is used with steel, concrete or wooden bins. The device has been "engineered and designed to specifically vibrate each individual particle of material (with sonic



Also Available

The following items have appeared in the What's New section of recent issues of Croplife. They are reprinted to help keep retail dealers on the regional circulation plan informed of new industry products, literature and services.

No. 5673—Automatic Packaging

The St. Regis Paper Co. announces that "fully automatic packaging has now been extended to the filling of open mouth multiwall bags with the development of its St. Regis VredOMatic packer which makes it possible to fill open mouth multiwalls and sew them closed with or without boundover tape automatically. The VredOMatic packer is used in combination with a St. Regis pre-weighing scale." The packer positions, opens, fills, closes and sews, with or without tape, open mouth multiwall bags holding 25 to 125 lb. of granular, free-flowing materials such as feeds, sugar, ammonium nitrate, polyethylene pellets and similar products. It can also handle semi-free-flowing ma-

Send me information on the items marked:

☐ No. 5670—Folder	☐ No. 6553—Assembly
☐ No. 5672—Bag Conveyor	☐ No. 6554—Lawn Kit
☐ No. 5673—Automatic Packer	☐ No. 6556—Gibberellic Acid
☐ No. 5675—Vibrator	☐ No. 6558—Folder
☐ No. 5680—Unbridging Bins	☐ No. 6559—Pesticide Sales
☐ No. 6549—Fungicide	☐ No. 6560—Applicator
☐ No. 6550—Chemicals Booklet	☐ No. 6561—Folder
☐ No. 6551—Fungicidal Paint	☐ No. 6562—Vibrator

NAME .....

COMPANY .....

ADDRESS .....

CLIP OUT—FOLD OVER ON THIS LINE—FASTEN (STAPLE, TAPE, GLUE)—MAIL

FIRST CLASS PERMIT No. 2
(Sec. 34.9, P. L. & R.)
MINNEAPOLIS, MINN.

BUSINESS REPLY ENVELOPE
No postage stamp necessary if mailed in the United States

POSTAGE WILL BE PAID BY—

Croplife
P. O. Box 67
Reader Service Dept. Minneapolis 1, Minn.

es) causing it to break loose," rding to company spokesmen. h bin attachments on a variety of the device may be moved from bin to another. When used with chments it operates automatical- When installed permanently on bin, no bin attachment is neces- . The device is operated by air. re complete details by checking 5660 on the coupon and mailing this publication.

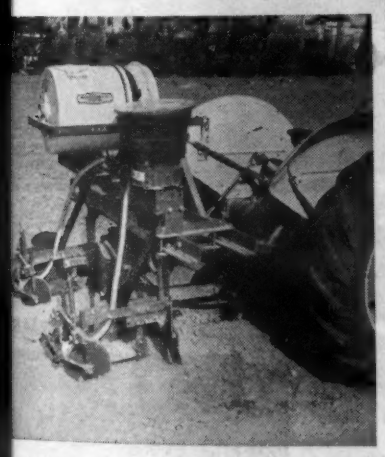
o. 6559—Pesticide ealer Program

omplete information about its icide dealer program is contained literature prepared by the Cali- ia Spray-Chemical Corp. as part

its 50th anniversary observance. e program is centered in the firm's nt-of-sale aids, national advertis- , movies and other educational aids signed to sell the Ortho garden and me line. Full details may be secured checking No. 6559 on the coupon d mailing it to Croplife.

o. 6560—Applicator

The Gustafson Manufacturing Co., c., has been working with one of e major fungicide manufacturers d has developed an applicator, call- by the trade name, Chem-Soil mix- which is used with the Gustafson



odel Fo-Ro revolving drum duster r treating seedling diseases. The ap- icator is planter-mounted and dur- g the planting operation treats the ed, the bottom of the seed bed and e soil that covers the seed. Accord- g to the company, the treated "safe- zone destroys or retards the de- ructive fungi which are very active uring cool, damp weather." Two odels of the mixer are available. he FMO mixer mounts on lister anters without seed imbedding heels and the FMK mixer mounts n planters which use seed imbedding heels. The Fo-Ro duster is tool bar ounted on the planter and is power- d by a PTO assembly from the trac- r. The mixer with the Fo-Ro duster ill mount on most makes and models f planters. Check No. 6560 on the oupon to secure complete details.

No. 6554—Lawn, Garden Kit

A lawn and garden kit, called by he trade name, "Robot Gardener," is new product of the Leeds Chemical roducts Co. It consists of a tri- ected chamber which attaches to any ose and sprinkler or nozzle. The chamber is then filled with bullet-like cartridges of fertilizers, weed killer and insecticide. The hose is then turned on and—automatically—the products fertilize the lawn, and act as weed, crabgrass and insect controls. The concentrated ingredients are mixed at a controlled rate in the chamber. The Robot Gardener is being introduced in kit form which will include: Two pounds of fertilizer, (which treats 2,000 sq. ft. of lawn at one time), automatic chamber, weed killer, and insect killer. Get complete details by checking No. 6554 on the coupon and mailing it to Croplife.

No. 6556—Gibberellic Acid Formulation

Brellin is the trade name for a new water-soluble powder formulation containing the plant growth stimulant gibberellic acid introduced by S. B. Penick & Co. The Penick announcement states: "Since gibberellic acid is applied at low concentrations, it was vital that a simple and practical method of preparing solutions be developed. When dissolved in one pint of water, one level teaspoon (2.5 grams) of Brellin will make a solution containing 10 parts per million of gibberellic acid. In general, the best response has resulted from this rate of application, but those desiring to experiment at other levels can do so simply by increasing or decreasing the amount of powder or water used. Preliminary studies indicate that gibberellic acid increases the growth of dwarf azalea, chrysanthemum, juniper, maple, oak, Virginia pine, poinsettia, white spruce, African violet, and other plants and shrubs." Check No. 6556 on the coupon and mail it to secure complete details.

No. 6550—Agricultural Chemicals Booklet

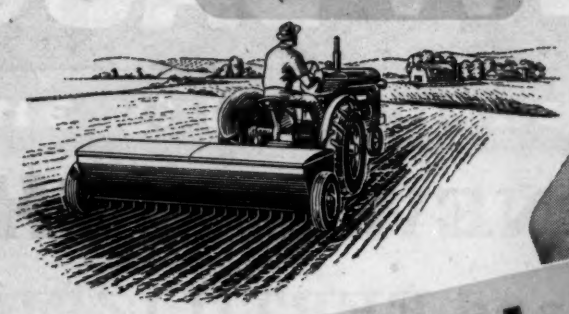
The Harshaw Chemical Co. has prepared a 20-page booklet entitled "Harshaw Chemicals for Agriculture." The contents include sections devoted to essential trace elements in plant nutrition, trace mineral compounds, fungicides, weed killers and miscellaneous agricultural compounds. Facts about the company and its facilities are included. In the booklet also are a list of agricultural chemicals manufactured by the company, other literature available from the company and supplementary reading suggestions. The booklet will be sent without charge if you will check No. 6550 on the coupon and mail it to Croplife.

No. 5675—Vibrator

A new leatherette-bound 36-page catalog on "Peterson Vibrolators" for industrial applications is available on request, according to officials of the Martin Engineering Co. The catalog describes in detail, pictorially and editorially, the action of the all-directional, high-speed vibrator used for the movement of granular matter. Each of the models is shown in

(Continued on page 14)

TC TENNESSEE CORPORATION



GRANULAR

TRIPLE SUPERPHOSPHATE

For Direct Soil Application

As in all U. S. Phosphoric Products, Granular Triple Superphosphate is produced under the most exacting chemical and physical controls to furnish you and your customers a product of consistent uniform particle size, completely dust free with low moisture content that will not cake or lump in storage or bridge over in the hopper. It drills free to provide the desired amount of plant food through even, uniform flow and distribution.

RIGID QUALITY CONTROL
Through Six Basic Chemical and Physical Analysis

HIGH WATER SOLUBILITY
High Water Solubility is a Characteristic of all 3 Grades

RUN-OF-PILE
Fine Texture, Highest Porosity, Large Surface Area, Small Particle Size, for Maximum Ammoniation-Granulation.

GRANULAR
Dust Free, Free Flowing, Uniform Particle Size, Medium Hardness, No Bridging Over, for Direct Soil Application.

COARSE
For Intermediate Ammoniation to Produce a Semi-Granular Product. Also Affords Excellent Compatable Mixing with Granular Potash, for Minimum Segregation, in Alkaline Grades.

GUARANTEED 46% A.P.A.

Available in Bags or Bulk

There's a BRADLEY & BAKER office near you. Their representative would be pleased to consult with you on your requirements and to advise on your most convenient delivery routings.

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IMPROVED PERSONAL SELLING

(Continued from page 9)

person's relationships with others yield satisfactions for those desires, it is usually relatively easy to do business with him.

● **Inner self-confidence.** — Every customer wants to feel sure of himself. If the salesperson helps to strengthen this feeling, the selling situation is improved. But if the salesperson "yanks the rug from under the customer's self-confidence," as it were, further dealings may be almost impossible. Customers like to feel that their business is important to the company, that their ideas are good, that their judgment is sound, and that salespeople respect them. If they get opposite feelings the sale is likely to fall through.

● **Recognition.** — Customers, along with everybody else, want to be appreciated. In fact, many of the things they buy are intended to enhance their recognition by others. In the same way, they want recognition in the selling situation. They like to be thought of as individuals. They don't like to be ignored or taken for granted. Some, for example, complain bitterly if they feel that they have been overlooked. Others simply leave as quickly as possible and go where they feel they will get proper attention.

● **Importance of intelligent listening.**—Acknowledging that there are great differences as well as certain similarities among people, how can a cooperative relationship between salesperson and customer be built up? Perhaps the best answer is: Through intelligent listening. This means that the salesperson listens with an attitude that permits the customer to express freely his feelings and prejudices.

One way for a salesperson to check this listening process is to restate in his own words, the customer's position until he has expressed it to the customer's complete satisfaction before moving on to any other phase of the discussion. Intelligent listening provides clues as to how the customer sees the situation or the merchandise. It is not, however, simply nodding and saying "Yes" while the other person talks. It means thinking about what's being said and what it means.

BASIC PERSONAL-SELLING SKILLS: Good personal selling is, of course, made up of more than a customer centered attitude. That's only a start. Personal selling involves many actions, too. To improve means that the salesperson must actually do certain things more skillfully than before. What things? Here are some of the essential ones:

To begin with, the salesperson's main function is not so much finding out whether a customer wants something, but rather finding out what is wanted. After that, it is a question of helping to fill that want and insuring satisfaction.

If you were to study a cross-section of men and women noted for success in personal selling, you would find a dozen or so main functions which these experts all did well. These common skills are:

1. Greeting customers; 2. Asking questions; 3. Displaying merchandise; 4. Putting customers in a good frame of mind; 5. Showing interest; 6. Using opinions as selling points; 7. Supplying facts; 8. Answering questions; 9. Meeting objections; 10. Agreeing with customers; 11. Suggesting additional merchandise; 12. Building repeat business.

Successful sellers often start off by using such greetings as "Good morning! May I help you?" or "That's pretty, isn't it?"

Good questions are short and easy to answer without the chance of embarrassment. Thus, for example, the skilled salesperson is likely to use an approach like: "How soon do you need this?" instead of "How much can you afford to spend?"

Effective salespeople show as they sell, performing several functions at once. For instance, they couple display of merchandise with greeting the customer, answering his questions, stating facts, and using opinions as selling points. They get items out of showcases and off shelves and into customers' hands quickly, with little worry about damaged goods or the extra work involved.

Most able salespersons rely on ordinary acts of courtesy and friendliness to get customers in good frames of mind and keep them there. Offering a seat or hanging up a coat are typical. They pay close attention, too, to customers' comments and reactions.

Crack sales personnel show interest by remembering names and past purchases of regular customers, by inviting new ones to put their names on a mailing list for announcements, and by offering such special services as combining several bundles for easier carrying.

On the use of opinions as selling points, astute selling employees note that customers are often more interested in what somebody thinks of an item than in specific facts about it. Many times the salesperson who reminds a customer that an article is "nice," "popular," "smart," "good-looking," "lovely," or "right" will have better success than someone who outlines physical specifications.

In supplying facts, the best sellers stick to the merits of their own products and avoid discussion of a competing item's shortcomings. They are conversant with product features, but they don't burden customers with more information than is requested.

When answering customers' questions, expert salespeople are usually specific and candid. To a customer wondering whether an electrical appliance would need to be serviced, a good salesperson would reply, "Equipment of that kind will wear with use and sooner or later will need to be serviced." Prices are quoted promptly and accurately, without hedging.

Meeting objections takes tact and understanding. Valid ones must, of course, be admitted as fact. Competent salespeople usually answer them by pointing out the article's compensating virtues. If the customer simply indicates a preference for a competing brand the reply may be, "Perhaps you'd be wise to try our brand so as to make a comparison. It's a very fine product and many people, once they've used it, like it better than anything else."

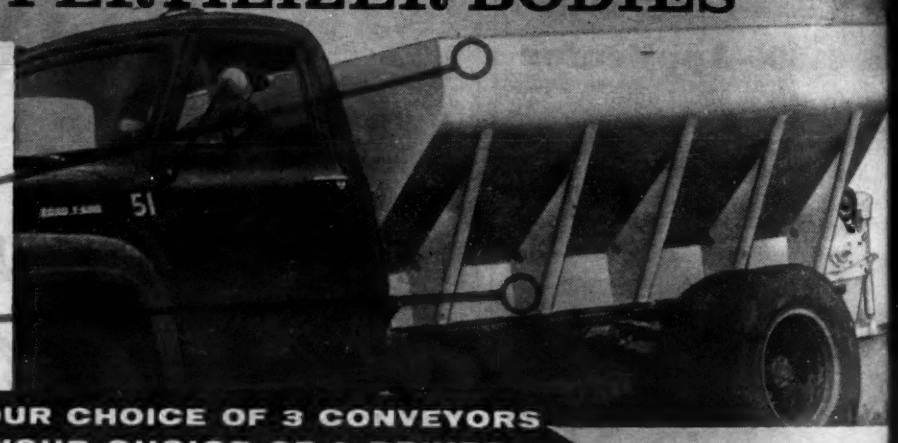
Even when a customer is entirely wrong, the expert salesman will not contradict or correct unless specifically asked for a confirmation of facts or an expression of opinion. Agreement helps to dissipate sales resist-

NEW BAUGHMAN

Compare Quality and Prices...

THE NEW BAUGHMAN K-5

LIME and FERTILIZER BODIES

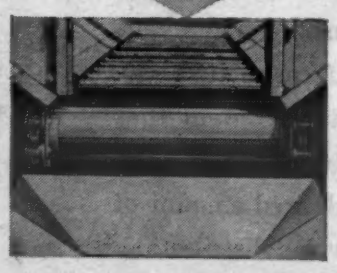


MORE RUGGED BODY

- Reinforced Top Edge
- Extended Jacks for full side support
- Internal Bracing

YOUR CHOICE OF 3 CONVEYORS
YOUR CHOICE OF 3 DRIVES
Each designed for a definite job
Ask for our recommendations

CONVEYORS



DRAG CHAIN CONVEYOR

20" wide. New, heavy duty—having two 20,000 lb. test malleable block chains, welded together with 4" spaced cross drags.

CHAIN BELT CONVEYOR

12" wide. Provides even flow of material to distributor. Links tend to break up small lumps, eliminating endgate plugging. Requires no shields, compartments or chokes. Positive sprocket drive.

BELT CONVEYOR

20" wide. Provides smooth even flow of material, even in smallest quantities. Double corrugated drum drives give more belt pull. Needs at least one compartment to ease load on belt. For dry material.

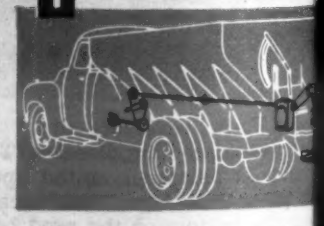
DRIVES

1 Power-take-off driven Distributor and Power-take-off driven Conveyor Drives direct to heavy 44-1 sealed gear case, mounted left or right, and by short #60 chain to distributor case. Has two speeds on conveyor and distributor. (High) for Lime; (Low) for Fertilizer. Has 1-3/16" drive shafts. All bearings sealed against fertilizer.

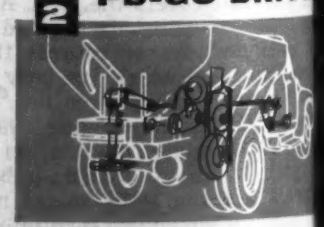
2 Power-take-off driven Distributor and Ground drive Conveyor. Drive can be mounted left or right. Has two speeds. (High) for lime and (Low) for fertilizer. Patented Baughman Ground drive Conveyor gives an even discharge of material in any gear or speed of travel. (Actually Ground Driven.) GC Models have SPREADING CHART showing accurate endgate settings for volume.

3 Hydraulic motor which drives Distributor is powered by hydraulic pump on power-take-off. Baughman Ground drive powers Conveyor.

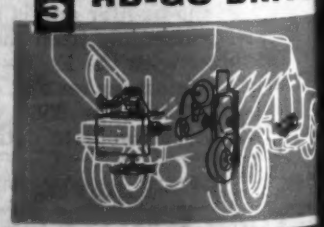
1 PD-PC DRIVE



2 PD-GC DRIVE



3 HD-GC DRIVE



BAUGHMAN

The pioneer and largest manufacturer by far of lime and fertilizer spreading equipment.

ance, to avoid argument, and to establish an atmosphere conducive to making the purchase.

Proficient sellers seek opportunities to suggest additional merchandise after a customer has made an initial purchase. In some cases this means simply saying, "Why not take our larger $1.95 size? It contains three times as much as the regular $1 size, and the larger package is very handy." Subtler applications may involve proposing related articles; calling attention to special-sale items; suggesting seasonal merchandise, or items sold in connection with commemorative days soon to occur; and promoting "new" goods which have just come in, or unusual goods being distributed exclusively.

Top-flight sales personnel try to have customers leave with goods which are suited to their wants and pocketbooks, and with the feeling that their patronage is welcomed and sought in the future. Frequently used are parting remarks like, "Many thanks, Mrs. Madison, I'm sure you'll be pleased with this item. It's always a pleasure to help you; do come in again soon." Sometimes a friendly comment makes the difference between a repeat customer and one who goes somewhere else next time.

A CLIMATE TO ENCOURAGE IMPROVEMENT: The foregoing points can be applied by an individual salesperson in his own job. Consider now the role which you, as owner or manager, must play in providing a climate in which your salespeople will want to improve and will be helped to do so.

● **Maintaining ethical standards**—Some managers see little wrong with what they term "kidding employees along to keep 'em happy." This can involve withholding a little information here, stretching the truth a bit there, breaking a promise another time, and other acts of that sort. These lapses in ethical standards are damaging to personnel development. Respect for management is undermined. Confidence and incentive are lost. Effective communication becomes difficult.

If a salesperson is promised a raise within a certain period, it is highly important that this promise be kept. Similarly, if a salesman is promised that he won't be transferred, the same is true. Many managers don't consider themselves untrustworthy when they keep putting off things they've agreed to do. But the person who is counting on action being taken will lose confidence in a boss who distorts facts and doesn't keep his word. Ethical standards are highly significant in small stores because one disgruntled employee can sour the others very quickly. They in turn cannot help but pass their bad humor on to customers.

● **Setting a favorable tone**—In small firms, the top manager, more than any other person, sets the tone of the business. What is tone? It's the distinguishing quality or mood of an organization as a social group. It has an important influence on people's desires to improve. A favorable tone makes employees want to stick with a company and help it grow. An unfavorable tone makes them more interested in finding pleasanter work than in doing a better job. Every concern has its particular tone; "country club," and "ulcer outfit," are two of the employee terms for it.

What determines tone? Mostly, it's what the top man does and says: For example, one boss dresses slovenly, uses profanity, delights in practical jokes, and refers to customers as "suckers." Another boss listens more than he talks, always seems relaxed and cheerful, is often first at work and last to leave, and makes decisions quickly and quietly. Each man imparts a tone to his organization: The first will tend to stifle improvement; the second will tend to promote it.

● **Keeping people informed**—Salespeople, like most others, want to know what is going on in the company. In the absence of authoritative information, rumors will develop. These should be dealt with decisively and promptly. They should not be ignored. Some rumors, of course, will arise and upset people despite all efforts.

Two points are important: First, try to track down the origin of the rumor and relieve its source. Second, make sure that the rumor is identified as such, and corrected with complete and accurate facts. The best preventive measure for rumors is a regular report from the top man on current activities and plans.

● **Looking ahead**—People tend to want to improve more in a climate where the emphasis is on looking ahead rather than on what happened in the past. In measuring performance and setting budgets it is easy to talk too much in terms of what expenses were "in the old days," or of the advertising program for "last year," or of how much was sold "last half," or of the errors made in the "last clearance sale." This sort of thing tends to produce conflicts in the salespeople's minds; management tells the salespeople to do better tomorrow, but talks of nothing but yesterday. The best approach is to stress positive thought and action leading to a brighter future.

● **Handling preconceptions** — Both salespeople and managers can have preconceived ideas. These ideas may or may not be correct; the important point is that people do have them and do make judgments based on them. If, for example, salespeople believe that "working conditions are poor," or that "only the least desirable customers trade here," such beliefs become facts—at least to those people. The real problem is: Why do they believe as they do? Little is likely to be accomplished by lecturing employees to straighten them out. The "papa-knows-best" attitude is seldom effective. What is needed in these situations is less dogmatism and more objective investigation. If it is to be altered, a preconception must be understood.

● **Allowing opportunities for mistakes** — Valuable lessons can be learned from mistakes. Sometimes, in fact, they are better teachers than success. Without mistakes there is no progress. Hence, a good climate for improvement, implies the opportunity for salespeople to make mistakes, to admit them, and to profit by them. This is not to say that mistakes do not matter. They do, and every effort should be made to discover and reduce them constantly. What it does mean is insistence on employees' open-mindedness and on their taking care in checking facts, reasoning, and probable effects—before action is taken.

Nothing is learned from errors which are covered up. Records and analysis should be used to point up errors in judgment, and to provide the basis for rectifying mistakes and for building sounder judgment in the future.

SPREADERS

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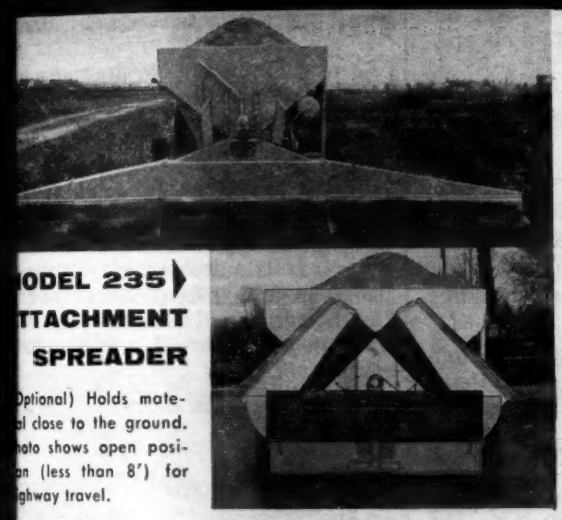

ODEL 235
TTACHMENT
SPREADER

Optional) Holds mate-
al close to the ground.
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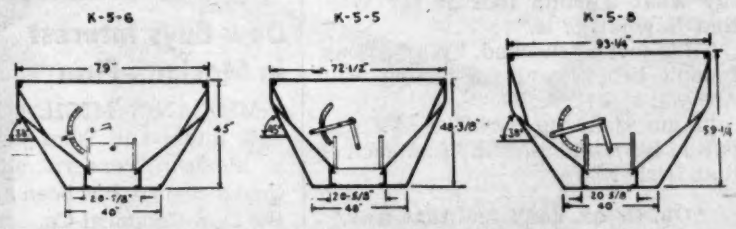
Body styles and widths available in Chain Drag and Belt Conveyor Models.



Chain Belt Conveyor Models also available in three sizes with 12⅝" Endgate and 8" narrower body.

ugged on top! Durable on the side! The rolled top edges
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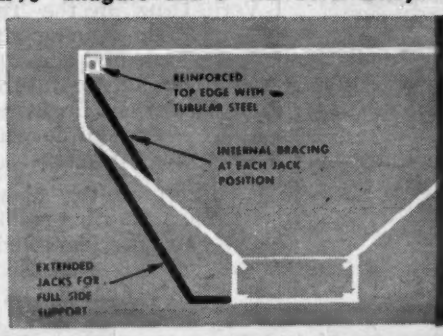

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Power-take-off driven Distributor	Power-take-off driven Distributor	Hydraulic driven Distributor
Power-take-off driven Conveyor	Ground drive Conveyor	Ground drive Conveyor
Body Price $544.50	Body Price .....$ 544.50	Body Price .....$ 544.50
Drives $302.50	Drives .....$ 605.00	Drives $1270.50
TOTAL $847.00	TOTAL $1149.50	TOTAL $1815.00
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avy Duty BULKMOBILE. Huge Capacity (740 Cu. Ft. Cap. shown here). Full ydraulic or gas engine operation with hydraulic conveyor. Ideal as "parent" dy for feeding spreaders in the field. All sizes.

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Doing Business With

Oscar & Pat

When Oscar came back to the office after lunch he was in a very recalcitrant mood. Minnie, his fearful, obedient wife, had bought some expensive wieners from a quality market near home, instead of going three blocks further downtown to a cut rate market. But she had an excuse—she had a bad cold and could hardly talk and her legs were weak, and so just this once she had stepped out of line, economically speaking.

But to Oscar this was no excuse for wild spending, as he termed it. Had Minnie been sick abed, unable to get up, he would have been content with sausage and rye bread, making the sandwiches himself. But to be able to get up and walk, and then pay more for wieners or anything else, when a cut rate store existed nearby, this was the great sin against his way of living. And he had scolded Minnie until she cried, whereupon Oscar had slammed the door and gone back to work.

Now, still muttering to himself, he came into the office through the warehouse door. He noticed a freshly painted sign on his partner's desk, and glanced at it sideways while he hung up his hat and coat.

"Ach, what is this?" he asked, like a cat ready to pounce on a mouse. Slowly he read the headline "No Paycheck If You Don't Work." The copy then went on to say that anyone knows that unless one works at a factory bench, or in a store, or at a laboring job, he won't get paid unless he puts in a certain amount of work. That was common sense. There was no getting away from that.

"Himmel, what foolishness is this?" Oscar cried, glancing at Tillie Mason, the ulcerish inclined bookkeeper who was just finishing her lunch. Pat McGillicuddy had already left for lunch at a chamber of commerce gathering.

"Now don't get angry, Oscar," cautioned Tillie. "That's one of Pat's signs. Ask him when he comes back. And don't take it out on me. I can't stand this bickering much longer. I have a chance to be a bookkeeper down at the sausage factory. There's only one boss down there. And I might take it if you two keep on fighting all the time."

"I have to fight!" Oscar complained. "Ach, if I let that Irisher spend like he wants to everything we got would be gone in a month. I got to watch him all the time. Now this crazy sign. What in the world has working in a factory got to do with selling fertilizer? That crazy Pat."

Tillie handed him another sign which lay on her desk. "Here's the companion sign. It goes alongside the other in a new window display. I had nothin' else to read while I was lunchin' so I looked it over."

Oscar picked up the second sign and read "Yes . . . It's No Paycheck If You Don't Work. And . . . No Crop If You Don't Fertilize!" He practically howled his disgust. "He has said that many times this winter and spring—the same thing. Ach, how foolish."

"In advertising, they say you have to repeat important things," Tillie ventured timidly. "Remember now, don't get too mad, or I will quit."

"Phooey!" Oscar cried. "Always he tries to find new ways to spend money. What's wrong with tryin' to hang onto a little money once in a while. That's what I am trying to do here. What's wrong with it?"

"You repeated yourself," Tillie ventured. "I heard you."

Oscar flushed a deep red. "It's no wonder I don't do worse than that around here! Such monkey business goin' on all the time." He whirled around, then he caught sight of considerable disarray in the two window displays. "Himmel, what's goin' on up there?"

He strode forward angrily. Looking down at the window area he saw that about 4 in. of black dirt had been dumped into a wooden frame in one window. He turned just in time to see Tillie coming forward.

"The load of dirt came just after you left for lunch," she said. "Pat has a real cute idea, I think. He wants to show the famous Morrow plots of the University of Illinois, and their fertilizer experiments."

"So he's going out of the state now!" thundered Oscar. "Why doesn't he stay at home, if he wants crazy window displays like this? What's the matter with Iowa? There's some good people in this state. And we win the Rose Bowl when we go out there."

"Why, Iowa is wonderful, Oscar. But the Morrow plots—they'll help get more business. Those signs you didn't like, they fit in the window, too. Pat told me all about it."

"Oh, he did, did he? Ach, and did he tell you that we are way behind on collections compared with last year? Did he tell you that I put in about twice as many hours in this business as he does? Ach, and did he say what a damn fool he is? Well, that is what he is."

Tillie looked shocked. "Why, Oscar, I don't believe you are feeling well. Are you sick?"

"I am sick—up here!" And Oscar patted his balding head. "I am sick of that Irisher."

"Oh, Oscar, don't feel that way," pleaded Tillie. "This idea will interest farmers and perhaps sell more fertilizer. Those Morrow plots have been planted continuously to corn without treatment since 1876. Just think of it."

"I don't care when they started. I wasn't born yet."

Tillie went on. "Then in 1955 and 1956, before the lands were treated for the first time, the average corn yield was only 29 bu. per acre."

"Ach, they were foolish to plant corn there. But what—"

"Then," interrupted Tillie, "when that same land got a treatment of manure, lime, phosphate, plus extra nitrogen, potash, etc., in 1955 and 1956, corn yield per acre went up to 128 bu. I guess that'll make farmers think twice. And the window display with dirt in it is supposed to be that Morrow plot."

"All that bother just for that!" Oscar snorted. "Why does he have to change window displays every two weeks? Why not let the same one in for a couple of months, and use his time to collect what farmers owe us? That makes sense to me."

"But a business has to try to make more people buy, too."

"Ach, the only ones who don't buy unless they are coaxed are those that don't pay," Oscar pointed out, shaking his head. "I can see I will have to put in a cot down here and stay here 24 hours a day. Otherwise that Irisher will be slipping stuff over on me when I am gone. Himmel what a life. If only—"

He had a sudden thought and strode to his desk. He picked up a copy of Croplife and hurried out into the warehouse to the men's room, which was his favorite thinking spot. On the way he opened Croplife to the classified section. "This time I hope I find a dealer who wants to sell out cheap!" he half prayed. "Real cheap—almost for nothing!"

Dow Buys Interest In Mexican Firm

MIDLAND, MICH. — Purchase of 50% interest in Sales y Alcalis, S.A., a Mexican concern situated near Coatzacoalcos, has been announced by the Dow Chemical Co.

Sales y Alcalis, S.A., owns extensive salt mining rights in the state of Vera Cruz on the Tehauntepec isthmus. The mining site, comprising several hundred acres, was purchased as a location for future manufacturing operations involving caustic soda and other alkali derivatives, chlorine and related products.

Officers of the firm include Jose Domingo Lavin, president; Felipe Laso, vice president and general manager; Clayton S. Shoemaker, vice president; Abel de la Cueva, secretary, and R. N. Zick, treasurer. Mr. Shoemaker is president of Dow Chemical Inter-American Limited and Mr. Zick is manager of its Mexico City office.

CORNELL MEETING—Farm use of petrochemicals was subject of a talk by L. C. Kemp, Jr., of the Texas Co., at a Cornell Farm and Home Week luncheon sponsored by the Oil Information Committee. Fertilizer ammonia, pesticides and cattle feed supplements are some of the farm commodities made from petroleum or natural gas. Mr. Kemp predicted the petroleum industry will spend $100 million for research this year. Some 250 attended. From left to right above are James A. McConnell, Cornell professor of agricultural industry and former general manager of Cooperative G.L.F. Exchange; Mr. Kemp; Glenn Lawrence, Corfu, N. Y., chosen outstanding young farmer of New York; and J. C. Corwith, Water Mill, N. Y., G.L.F. president.

WHAT'S NEW

(Continued from page 11)

photograph with description of characteristics and applications. Specifications and performance data are listed. A variety of suggested mounting is illustrated. The catalog will be sent if you will check No. 5675 on the coupon, clip and mail it to this publication.

No. 6549—Liquid Fungicide

The Chemical Insecticide Corp. has developed a new sticking agent, U-101, which it is adding to the liquid fungicide it markets under the Chem-Bam name. The agent is said to make the fungicide adhere more strongly to vines and plants. The company's announcement states: "U-101 virtually gives crops an impregnable coating of fungicide that can't be washed off by rain or watering. This, of course, gives crops greater protection against early and late blight, anthracnose, downy mildew, cercospora, blue mold, gray mold, bunch rot, and leaf spot than was possible heretofore. The fungicide has been used with great effectiveness on sweet corn, celery, beans, escarole, lettuce, potatoes, cabbage, cucumbers, peppers and beets. For free literature check No. 6549 on the coupon and mail it to Croplife.

No. 6553—Aluminum Diaphragm Assembly

A new aluminum diaphragm assembly designed particularly for use with nitrogen solutions and any other pressure medium not injurious to aluminum, has been developed by the Jas. P. Marsh Corp. The unit is designed for field assembly and may be used with any reliable fluid-filled pressure gauge. It is suitable for applications using up to 200 lb. pressure. The entire housing is of aluminum, the diaphragm is of Buna-N, a flexible, rub-

ber-like material that is said to retain its original resilience even under heavy usage. A plastic tube of filling fluid and detailed instructions for field assembly are furnished with every unit. Secure complete details by checking No. 6553 on the coupon and mailing it to Croplife.

GOLF OUTINGS

NEW YORK — Five golf outings have been scheduled for 1957 by the Salesmen's Association of the American Chemical Industry (SAACI), it has just been announced by Vincent L. Rebak, New York district sales manager of Grace Chemical Co., New York, SAACI president. The first outing will be held May 14 at North Jersey Country Club, Paterson, N.J. Other outings will be held June 6 at Huntington Crescent Club, Huntington, L.I., N.Y.; July 9 at Bonnie Briar Country Club, Larchmont, N.Y.; Aug. 5 at Tamarack Country Club, Greenwich, Conn., which will feature golf and a clam bake, and Sept. 10 at Hackensack Country Club, Oradell, N.J. Arthur C. Curran of Meer Corp., New York, is chairman of SAACI's Golfing Committee.

OVER THE COUNTER

(Continued from page 9)

alked more about sales producing eas, and they also asked for a les training program. The mer- ant obliged, and at the end of the ear his sales were up tremendous- , and his employees were earning ore than ever before.

This story illustrates the adage, ou can lead a horse to water but can't make him drink." The mer- nt mentioned above used an idea ich stimulated the men to greater tion on their own score. If he had d down a requirement of $1,000 rth of sales per week per employee guarantee a $70 a week income, e men would have felt resentful in me instances. But when the mer- ant made it possible for them to ake the decision themselves, volun- ily to go on the new basis, he oused their determination and initi- ive to reach higher goals.

Whether you have a small business a large one, you can use this plan some or all of your employees. Let em choose for themselves if they ant to accept the plan you offer, or on a guaranteed weekly salary th no commissions. Several of the ore ambitious of your workers will ant to go on the new plan immedi- ely. These volunteers will set the ce and show the others the ad- ntages of the plan.

In thinking of a plan like this the erage dealer must consider the fact at in terms of sales the man who is id a salary of $60 per week, with no mmissions, may not earn that much terms of sales. However, if he is aced on a pay-basis where the nount of his pay depends on how uch he sells, that employee is going pay more attention to selling, be- use he knows this attention will be flected in the number of dollars in s pocket every payday. This aware- ss of how his pay in earned, and w he can boost his earnings through s sales efforts will often make an erage employee a really high pro- cing employee, as has been proved me and again.

ommission Plan s. Bonus Plan

Now, how does a plan like this ape up against a yearly bonus plan, the profit sharing plan?

Actually, it may be better for a tail operation. Under the bonus an previously mentioned, employees not have the day-by-day aware- ss nor the necessity of constant at- ntion to sales. They feel that some- w or other the firm will make a ofit and from that they will be ven a bonus. Under the profit-shar- g plan, meritorious though it is in rtain instances, what each employee ts is dependent upon what all other mployees do, too, cooperatively.

Furthermore, the profit sharing lan, with its monthly or quarterly rofit sharing checks to employees ends to be quite far removed from he employee in his daily work.

When a dealer can pay his men ch Saturday, with a statement owing that his guaranteed salary so much, and his commissions on les so much, then the employee has mmediate, tangible evidence that his les efforts are related to pay checks.

Retailers in many fields who use is salary and commission plan for tail store employees, say that al- ost without exception employees ho are on this pay basis are more ert, more loyal, that they make tter use of idle time, that they will ean floors, fixtures and stock with- t being told to do so, that they will so work out better display ideas d be more friendly toward custom- rs. They do these things because ey know such actions have a direct d vital relationship toward putting ore money in their pockets on pay y through additional sales.

Good Practices Stand Out in Study of Green Pasture Farms

DURHAM, N.H.—A study of records of 34 of the New Hampshire farms entering the 1956 New Hampshire Green Pastures program points out that, in general, the efficiency of the farmers running larger herds was greater than those with the smaller ones.

About half of the 34 farms had high Green Pastures scores, the other half was in the low group, according to the judges. Ford S. Prince, New Hampshire extension agronomist, said the high-scoring group averaged 35 cows per farm, the low scorers, 25 cows.

Mr. Prince reports that the high scorers turn their land over more frequently than the low group and try harder to maintain clover and alfalfa in their stands. Eleven out of 18 men high on the score sheet reported using alfalfa. They averaged five acres of the crop. Conversely, only three of 16 in the low group grew alfalfa and these farmers averaged half an acre.

The top men averaged 51 acres of mixed clover and grass, the low scorers, 19 acres. Those rated highest had only 35% of their land in straight grass crop, while the less efficient group had 60% of their land in grass.

The upper half in the scoring used more fertilizer, $10.20 worth per acre of crop and improved pasture. In contrast, low scorers used $8.74. When fertilizer cost is figured on a per cow basis, the comparison becomes more striking. The top group of farmers spent $29.52 per mature animal while the low group spent $17.84, a difference of $12 in the fertilizer cost on the animal unit basis.

In addition, the top group used 40 tons of lime on an average while the others spread 22 tons. Mr. Prince notes that there was a difference in acreage but, calculated on an acre basis, the high scorers used a bit more lime than the other group.

The high scorers went in for more grass silage than the low group. They averaged 114 tons per farm or about 2.5 tons per animal unit. The other farmers made 55 tons or 1.7 per animal unit on the average.

The low scorers showed up better in the corn silage division, making an average of 47 tons or 1.4 tons per animal unit. The top group made 52 tons on the average or 1.1 tons per animal unit. Balancing the two kinds of silage, Mr. Prince said, revealed that the top group of farmers harvested 3.6 tons per animal while the low group made 3.1 tons a difference of half a ton.

According to this Green Pastures study, the top scorers had the best cows. The average yearly milk production of the cows on these farms was 9,211 pounds while on the low scoring farms it was 7,361, almost a ton per cow difference for the year.

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State Agricultural Experiment Stations and other authoritative sources are recommending fertilizers with ever increasing plant food units per ton. High analysis fertilizers are in demand because they give more for each fertilizer dollar. Meet this demand by incorporating Davison's New Triple Superphosphate in your formulation.
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What's Been Happening?

This column, a review of news reported in Croplife in recent weeks, is designed to keep retail dealers on the regional circulation plan up to date on industry happenings.

Ezra Taft Benson, secretary of agriculture, filed a protest to the Interstate Commerce Commission in opposition to recent railroad petitions for further increases in freight rates on agricultural commodities and farm production supplies. He pointed out that freight rates on agricultural products are now 83% higher than in 1946 and farm income in many areas is 4% lower than it was in 1946.

The North Central Branch of the Entomological Society of America, meeting recently in Des Moines, Iowa, heard discussions on recommendations for the 1957 season. Entomologists expressed doubts about how recommendations could be made that would be adequate for insect control and at the same time assure growers that no illegal residues would remain on crops at harvest time. The meeting was attended by some 350 persons from 14 midwestern states.

Provision for contingent funds to be used for campaigns in cooperation with state and local governments for control of insect pests was voted by the U.S. Senate. Purpose of this amending legislation is to permit operations by USDA before these pests and diseases reach epidemic proportions which would ultimately require large appropriations of money.

The South Norfolk (Va.) plant of F. S. Royster Guano Co. was damaged by fire April 3, knocking out the wet mixing plant and rock crushing machinery and some 40% of the fertilizer storage. W. T. Wright, vice president, said that the fire would not stop shipments of Royster products, since other storage facilities contain enough for present needs.

The plant food industry may have as good or better business in 1957, compared to last year, despite soil bank operations of USDA. Prospects for additional sales in the corn belt were seen to be greater than tonnage losses expected in cotton crop applications.

The U.S. Department of Agriculture announced plans for a spray program to eradicate the gypsy moth from almost 3 million acres of forest land in New York, New Jersey and Pennsylvania. Area-wise, it will be the largest single aerial spraying job ever conducted in the United States, USDA said.

The National Plant Food Institute said it would undertake a survey "to determine the factors which influence the farmer to buy fertilizers."

The American Potash Institute announced that North American deliveries of potash in 1956 by the seven leading American producers amounted to the equivalent of 2,307,961 tons K_2O, an increase of 4.7% over 1955 deliveries. Agricultural deliveries in the continental U.S. in 1956 totaled 1,872,704 tons K_2O, down 5,885 tons from the 1955 figure.

The Du Pont Co. said it has started building a new production unit to manufacture sulfamic acid and "Ammate" weed and brush killers on the site of its present East Chicago, Ill. plant. . . Shell Chemical Corp. is building a new unit at its Denver plant to produce methyl parathion.

A witness representing the Manufacturing Chemists' Assn. told the Antitrust Subcommittee of the Senate Judiciary Committee that the Kefauver-Patman Bill would result in restrictions on free competition. The bill would prevent a seller from lowering a price to an individual customer, if such an act would lessen competition or tend to create a monopoly, even though such a reduction in price were made in good faith, to meet a competitor's price. The witness, Henry H. Fowler, counsel for MCA, pointed out numerous ways in which such a law would be restrictive to the chemical industry.

Agronomists in the Middle West published a statement calling for support in changing the method of expressing fertilizer grades from the oxide to the elemental. Dr. M. B. Russell, head of the department of agronomy at the University of Illinois, acting as spokesman for agronomists from 13 corn-belt states, had presented the argument favoring a change at the recent joint agronomist-industry meeting in Chicago.

Speakers at the annual Missouri Aerial Applicators' Short Course held at Columbia, said that the soybean cyst nematode, recently discovered in southern Missouri, may be a native of the Mississippi River Valley and has avoided discovery for many years. He added that it is likely that the nematode will be found also in many other midwestern localities.

No federal funds are available for a program to control the fire ant infestation which threatens to spread northward from the Gulf Coast states. USDA spokesmen indicated that the most effective program for control is for farmers in the infested areas to apply recommended insecticides to halt the pests.

Allied Chemical & Dye Corp. began production of prilled ammonium nitrate at its Hopewall, Va. plant. New facilities had been installed recently for this purpose.

An advance in registration fees for pesticides was announced by the State of Minnesota. Under the new law, a fee of $7.50 will be charged for each item up to five, and $2 an item thereafter.

The National Agricultural Chemicals Assn. held its annual spring meeting at the Fairmont Hotel, San Francisco, with more than 300 registered. Promising new areas for pest control, including highways and forest lands; talks on credit conditions within the industry; and an analysis of the agricultural chemical trade on the basis of return on investment highlighted the three-day meeting, March 6-8.

The Middle West Soil Improvement Committee held its ninth annual meeting in Chicago in February, with an attendance of more than 500 agronomists and industry representatives from a wide area. Speakers included representatives of the industry and of the land grant colleges in the 13-states comprising the Committee's area.

FARM SERVICE DATA

Extension Station Reports

Circular 100, entitled "Meadow Spittlebug Control in West Virginia with Granular Insecticides," has been published, Dr. H. R. Varney, director of the West Virginia University Agricultural Experiment Station, has announced.

The circular reports the results of tests in which granular Dieldrin, granular Heptachlor and Heptachlor spray were applied to red clover plots to observe and compare their effectiveness in controlling this insect.

In 1956, on red clover plots near Huttonsville, experiment station entomologists tried a relatively new method of control. This method consists of an application of granular insecticide to the ground during or prior to the time the spittlebug nymphs are hatched. As the nymphs hatch, they crawl over the ground in search of a host plant, and are then susceptible to poisoning by the insecticide on the ground.

Dieldrin granules and Heptachlor granules were applied at the rate of one-half pound of the actual insecticide per acre to the plots on April 26. To compare this treatment with the commonly recommended spray treatment, other plots were treated with Heptachlor spray on May 3. Untreated plots were maintained to provide a control.

On May 8, 18 and 29, each of the plots was surveyed by pulling 25 handfuls of clover from the plot and counting the nymphs on them. On May 8, 445 nymphs were counted on the stems pulled from the untreated plots, and those stems pulled on May 29 contained 1,157 nymphs.

On the treated plots, very few nymphs were found at any time. Each of the insecticides provided approximately 98% control, and the plots receiving granular insecticides showed greatly reduced populations of the lesser clover leaf weevil and the clover root curculio. Authors of the circulars are H. L. Hansen, assistant entomologist, and C. K. Dorsey, entomologist.

★

"Weeds will be in for a rough time this spring and summer if farmers use all the killers that are available," says Dr. Ted Flanagan, University of Vermont agronomist.

"Weeds are costing the American public an estimated five billion dollars. Farmers alone are being robbed of about four billion dollars each year. This amounts to more than $5 per crop acre nationally and runs much higher on some crops. Pre-emergence sprays saved whole fields of corn last year by reducing competition so the corn could get a better start.

"Herbicides are used wherever weeds are a problem. They are used for weed control in garden and field crops, aquatic weed control, public health aspects of weed control and forestry and industrial uses including use along highways. Homeowners can use weed killers on their lawns to replace the back-breaking work of cleaning out weeds by hand.

"Problems still remain but practically all farm crops can be weeded at some stage of their growth with chemicals. Chemical control also means increased yields at the lower labor costs and expense, making it a good buy for farmers."

★

Antibiotic sprays may prove to be an important advance in leaf spot control on cherries in the light of experimental evidence from Cornell's New York State Experiment Station.

Information about the new spray materials and the effectiveness of other fungicides now being used by cherry growers was reported recently by Dr. Michael Szkolnik, plant disease specialist at the station.

"Perhaps the outstanding advance in research on cherry leaf spot control is the discovery at the experiment station that certain derivatives of actidione, an antibiotic, can control leaf spot systemically," he said. "This means that when some of these materials are sprayed on cherry trees, they are absorbed by the leaves and carried forward to new growth which they protect against leaf spot infection from within.

"When perfected, these materials might be relied upon to provide satisfactory leaf spot control with only two or three sprays."

Cherry leaf spot, if permitted to occur year after year in an orchard, reduces productivity of the trees because premature dropping of the leaves caused by the disease prevents the trees from producing the food reserves needed for tree growth and fruit production, explains the station scientist.

★

A total of 3,276 soil samples were submitted in 1956 to the Rhode Island Agricultural Experiment Station soil laboratory. This was an increase of 248 from the previous year.

A summary of the testing results showed:

Phosphate—16% of the samples were very low, 17% were low, 29% were medium, 31% were high and 7% were very high.

Potash—28% of samples were very low, 25% were low, 24% were medium, 17% were high and 6% were very high.

Acidity—9% of the samples were below 5 pH, 45% were between 5 and 5.9, 40% were between 6 and 6.9 and 6% were above 7.

★

First commercial testing of a cheap decay-preventive treatment for citrus fruit is being directed by a scientist at the University of California, Riverside. Dr. Irving L. Eaks, assistant plant physiologist in the Citrus Experiment Station, is testing ammonia gas in Tulare County packing houses to see if it works as well commercially as it has experimentally.

Cost of the treatment, if it proves out in practice, would be about a dollar per thousand boxes, he estimates. Tests now going on in packing houses at Ivanhoe and Strathmore, in cooperation with a large cooperative marketing group, will compare decay results in treated and untreated degreening rooms, where oranges are brought to color before shipping.

In earlier experiments, Dr. Eaks found ammonia effectively reduced decay. Injured fruit placed in degreening rooms decayed 75% when not treated but only 18% when treated with the gas. The percentage of decay was high in these experiments because the fruit was deliberately damaged to encourage fungus growth. In normal packing house operations decay would be much less.

DUSTER BALES OUT

BAKERSFIELD, CAL.—James E. French, Bakersfield crop duster barely escaped death recently when the crop dusting plane he was flying crashed in a farm land about 2 miles south of here. The 35 year old pilot baled out at 10,000 feet after the oil pressure failed.

DUSTRY SALES OPPORTUNITY SEEN

enate Defeats Proposal for 1 Million Acre Corn Base

By JOHN CIPPERLY
Croplife Washington Correspondent

ASHINGTON — Last week the te voted 45 to 35 to kill a pro- l introduced by Hubert Hum- ey (D., Minn.) to fix a corn acre- base under the soil bank of 51 ion acres, and at the same time, ire a reduction of that acreage by 15% as conditions of eligi- y for price support and soil bank ments.

efeat of the measure ends any nce for new corn legislation this . It kills the 51 million acre corn , which previously had been voted n in the House.

ssentially GOP farm leaders on itol Hill, in their interpretation he result, sense a big opportunity the plant food industry to make r promises to the farmer effective year.

These GOP spokesmen do not say in so many words, but in reading tween the lines of their com- nts, the defeat of this bill is a le open invitation for the plant d pesticidal chemical industries come through in a big way to luce production costs per unit, rease yields and on balance lead e corn farmer in the corn-hog t into higher net profit ground.

ere is about the way this equa- works out:

enate GOP leaders here tell plife that the corn-hog belt farm- has lost interest in Washington as great white father who lays down s to determine what the corn-hog mer should do.

p to the time when the Senate ed the Humphrey corn bill, there e virtually no complaints from corn-hog belt about the price of n.

orn prices have not been ruinous, ough corn has been selling for -compliers with acreage allot- nts at less than the low loan rate approximately $1.25 bu. in the ntry.

t the same time, however, those -complying farmers in the 1956 n acreage allotment program had ilable the USDA loan at several ts higher than their country price.

Under the corn acreage allotment 87 million acres—to the surprise of seasoned observers — the soil bank contributions have exceeded 5 million acres. That indicated to Congress, in the absence of written complaints, that the corn-hog belt was not worried about what happened in Washington this year.

Perhaps, to the consternation of critics of Ezra Taft Benson, the indifference of the corn-hog belt farmers may provide a ray of light into their steadfast faith in the political appeal of high price supports—or in fact any price support to the corn farmers.

For the plant food industry last defeat of the corn bill this week opens a wide avenue of opportunity.

It now can demonstrate what has been so effectively said many times by Dr. Russell Coleman, executive vice president of the National Plant Food Institute here, that the Corn Belt can produce more than enough corn to meet national and export needs from much fewer acres and at a bigger net profit per bushel than heretofore.

Davison Announces New Fertilizer Products

BALTIMORE—Two new fertilizer products for farm use, both of water soluble characteristics, have been announced by Davison Chemical Company, Division of W. R. Grace & Co.

The firm said that Dav-Gro is a high analysis water soluble plant food, with the formula 20-20-20, which also carries the essential minor elements and minerals. "It comes in 3 and 50 lb. moisture proof bags and when dissolved in water according to directions provides instant feeding for vegetables, citrus and fruit trees, truck gardens and field crops," said a company statement. "Its complete water solubility characteristic enables the plants to utilize the nutrients both through the roots and through the leaves.

"Start-Rite, also instantly water soluble, bears the 10-52-8 formula recommended to promote healthy early growth with vigorous root systems that ensure high quality yields. Start-Rite has been especially designed and formulated as a fertilizer for preparing transplanting solutions. It is packaged in moisture proof 3 and 50 lb. bags."

SALES MANAGER APPOINTED

MISHAWAKA, IND.—Kenneth E. Blessing has been made sales manager of the dust and fume control division of Wheelabrator Corp., the firm has announced. He was formerly district manager of the company's New York office, a post he had held since 1949. Mr. Blessing is a graduate of the engineering school of Purdue University.

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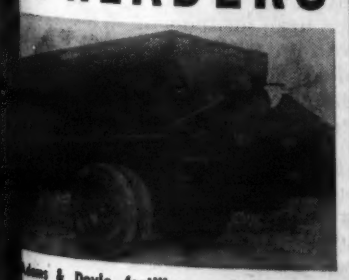

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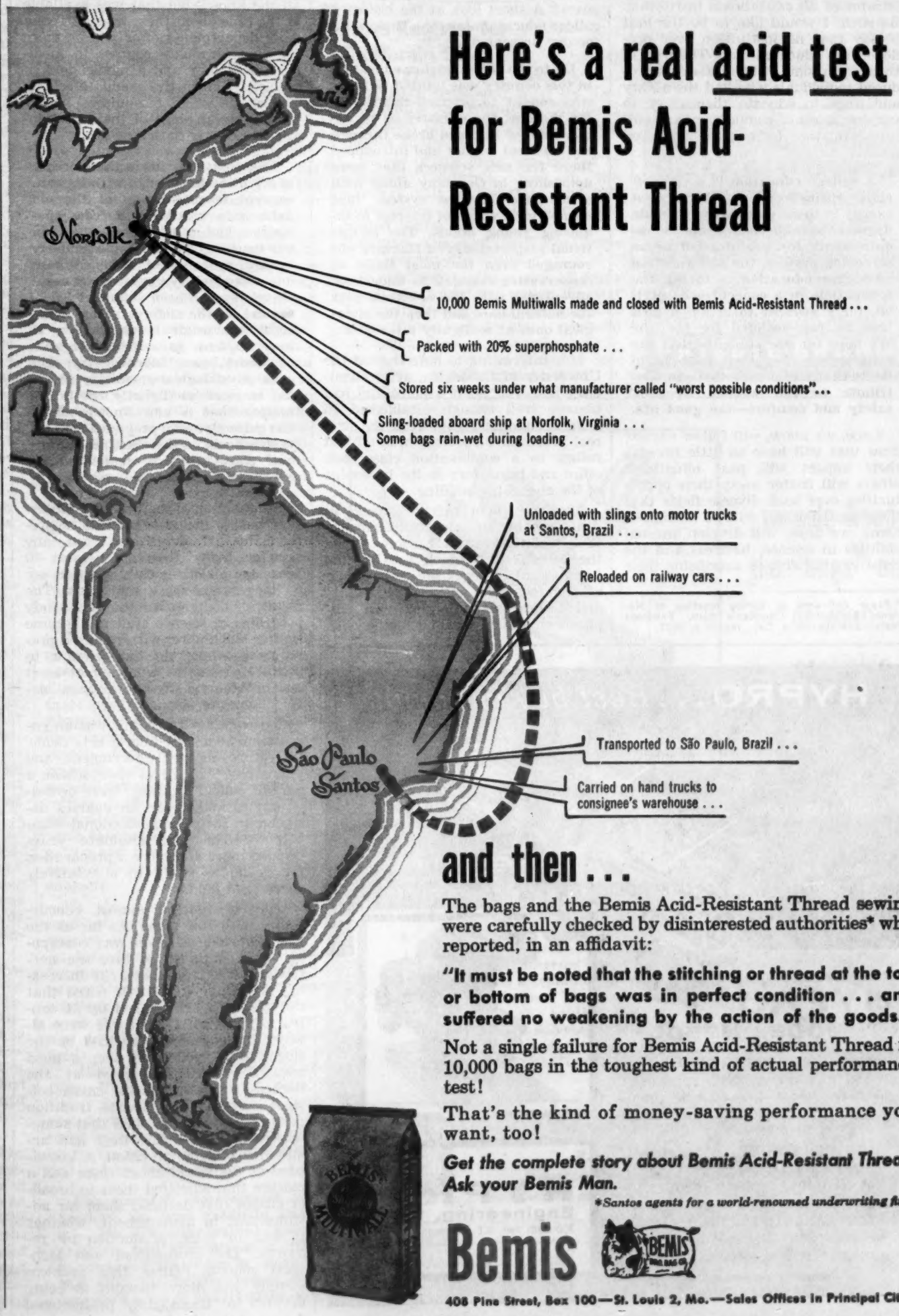
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EDUCATOR DECLARES . . .

Broad Academic Background Necessary for Scientists in Agricultural Chemical Field

By Dr. Stanley B. Freeborn*
Provost, University of California
Davis, California

The idea of combining the chief needs of industry—men, money and credit—into one panel is a fascinating one.

I am immodest enough to believe that given the minimal adequate amounts of each, I have the most important subject on the panel, particularly if "men" is interpreted as "brainpower."

The committee has chosen me to represent this phase, probably because of my connection as an administrator of an educational institution. As such, I would like to be the first to say that no institution ever produced the educated man. The best of them from some of their students produced individuals who had the ability and urge to educate themselves to varying levels of competency and culture after they forsook the cloistered walls.

A college education is a very effective springboard to industry, but except in those cases where certain degrees have been set up as requirements for qualification or as screening devices, the sole function of higher education is to lay the foundation, in a concentrated period, for a student to attain a goal that he has outlined for his life. We hope for our students that the competency they seek may be in fields that will enable them to contribute to the world's freedom, safety and comfort—the good life.

Some, we know, will follow narrow lines that will have so little breadth their impact will pass unnoticed; others will fritter away their opportunities over such diverse fields that their contributions will be negligible. Some, we hope, will develop unusual abilities in science, business and the creative arts without sacrificing their interest and continuing education in the world about them and their fellow men. These last are the graduates that industry and the whole world are looking for.

Some 80% of the youth of this country are presently graduating from high school, 30% are taking further post-high school training and about 15% are graduating from college. Based on industry's present statistics, a large proportion of tomorrow's leaders will come from this latter group.

How do you in industry want them steered during their under-graduate years? A short look at the history of college education lays the background for our present dilemma.

Up to the 1860's, higher education in this country was limited to those who sought to prepare themselves for the law, the ministry or teaching. Eliot of Harvard broke through the classical barrier and introduced there the new sciences that were flourishing in Germany along with a modified elective system that opened wide vistas of interest to inquiring young minds. The educational respectability of Harvard encouraged even the most timid or conservative colleges to undertake adventures with the sciences, first the natural ones and then the biological ones at a slightly later date.

It is interesting to note that at the University of California, after chemistry had won itself a place and had become well enough established to have a building all its own, the first real professor of zoology was offered refuge in a combination classroom, office and laboratory in the basement of the chemistry building.

Another important landmark in American higher education came in 1862 when Abraham Lincoln signed the Morrill Act which created the Land Grant Colleges for the training of the industrial classes with state and federal support and with emphasis on agriculture and engineering, but without excluding the classical studies.

Every state in the Union capitalized on this opportunity and higher education became a possibility for myriads of young men and women who wished to professionalize their interests in fields other than teaching, law or the ministry.

Colleges have tried conscientiously to keep up with the overwhelming accumulation of scientific knowledge through the proliferation of courses and subject matter content to the extent that broad courses of general education have been crowded out of the curriculum to the point that the usefulness of our graduates is reduced to specific technical specialties that definitely limit the graduates' general usefulness in their organizations.

When I graduated from college in 1914 as a major in entomology, the sum total of my knowledge in medical entomology, which later became my main interest, was a few lectures on mosquitoes, flies and lice; but the point was that I had learned about all the knowledge that was available at the time about these insects. Today most departments offer one or more full undergraduate courses in medical entomology and a whole field of specialization in the graduate school. The specialist in mosquitoes hardly knows the language of the entomologist working with lice or flies.

The great impetus in the increase of scientific knowledge with its consequent fragmentation of the old fields into relatively narrow specialties had a profound effect on our teaching programs, particularly in the professional fields. Where one introductory course in general chemistry had been sufficient background for the understanding of the eight old original insecticides, it now requires in addition organic chemistry, some biochemistry, and even physiological chemistry in order to read intelligently the information that is now known about the galaxy of new preparations and their effects on insects. This is only one phase that is replicated in every field of scientific endeavor.

The reaction of the teaching profession was to include these all as prerequisites. Students are not any smarter today than they were 40 years ago and their waking hours are no longer nor more numerous. The result, of course, was that the study programs of science students became tighter and tighter with required prerequisite studies in the attempt to produce graduates who had at least an introduction to all the new developments of science.

Consequently the result was an encroachment on the liberal arts fields. Literature, history, government, and philosophy, which had always been a part of college training, were crowded out to make way for courses designed to increase professional competence. The undergraduate years became more and more a preparation for graduate study in a relatively specialized field.

Industry reacted almost concurrently with this trend. As far as the bachelor's degree level was concerned, they continued to hire the narrowly trained graduates in increasing numbers, but it was noted that the great majority ended up at control benches although there were always the exceptions provided by the slogan that "you can't keep a good man down." Those hired at the bachelor's level from the small colleges and the liberal arts tradition demonstrated in the main that somewhere along the line they had acquired a breadth of vision, a knowledge of the world about them and a culture that admitted them to broader circles that destined them for advancement in management, whether it was in sales, production or research. The professional and technical schools realize this problem acutely and more thought is being devoted to "liberalizing" professional training than any other subject in e ucation.

To this point I have been talki about our B.S. product, the four-ye graduate. I think we all agree in t face of all I have said about the gro ing body of information that a we trained scientist should have, th our specialists—our research and d velopment men—must have the ext training equivalent to the doctora to keep up their share of the burd

My sole plea is that this spe cialization should not be pushe down into the undergraduate year at the expense of a program tha has breadth in literature, philoso phy, history and government a well as science.

Today the educational world is co vinced that we need to "generaliz or "liberalize" the curricula of o professional students. The problem to reach a consensus on what gener education really is.

I have made the statement th "general" education is the "Ho Grail" of education that disappea every time it is approached by tho with impure motives. One gro maintains that general education embodied in a knowledge of the pa and condemns the inclusion of a subject that remotely intimates application.

It is interesting that this group, though their main plea is for breadt is very apt, at least among the ze lots, to ignore the need for chemistr physics and the biological sciences the production of so-called we rounded graduates.

We might just as well face the fa that we are living in a mechani and chemical age that becomes mo dependent on physics, chemistry a biological sciences every day that w live. Without disparaging any oth subjects it would seem evident th a knowledge of the sciences is as ne essary to the graduate in the field letters as a basic introduction to l erature is to the potential scientist

On the other hand, the scienti are not entirely blameless. One the potent reasons why the introdu tion of science requirements into general education program has fail is that science teachers have ov whelmed their introductory studen with facts and more facts in order "cover the field." No student is ev put on the path to true education an encyclopedic accumulation facts. It is only when he becomes trigued with **ideas** that he is on t road to a true education, a proc that only **starts** in the school year

It is equally true that ideas wi out facts as building stones are si ply day dreams.

Hence, the whole problem of th ideal program in general educati really boils down to the capabiliti of the instructors involved rath than the subject matter of t course, provided of course that w have a real breadth in the subjec taught. The instructors who c introduce the right facts and crea the urge on the part of the stude to think accurately, to synthesi ideas and search for answers a the cornerstones of a liberal educ tion.

If our professors of introduct courses in literature, governm history, mathematics and scien could inculcate these principles in first years of college experience stead of attempting to prepare t students for professional special tion, our problems would be solv

Although interminable study been given to this problem of w makes a good teacher, the short and perhaps the most apt definit of the necessary qualities is sim "competency and warmth."

I know that it is a popular alibi college professors to place the bl for their failures to educate on fallibilities of the high schools preparatory schools. I'll allude to

* Paper delivered at Spring meeting of National Agricultural Chemicals Assn., Fairmont Hotel, San Francisco, Cal., March 6, 1957.

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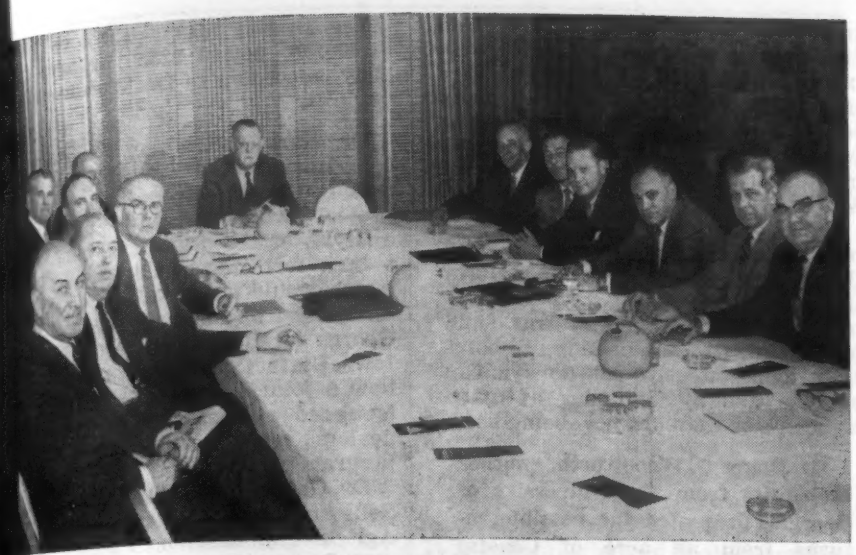

NAC BOARD OF DIRECTORS MEET—Members of the National Agricultural Chemicals Assn. are shown in the top photo as they met at the recent NAC spring convention at San Francisco. Seated around the table, clockwise, are Fred C. Shanaman, Pennsylvania Salt Manufacturing Company of Washington; James D. Hopkins, Hopkins Agricultural Chemical Co., Madison, Wis.; Ed. Phillips, Cooperative GLF, New York; George R. Vila, Naugatuck Chemical Division, U.S. Rubber Co., New York; Jack C. Vernon, Niagara Chemical Division, Middleport, N.Y.; Lea S. Hitchner, executive vice president of the NAC; Fred C. Hatch, Shell Chemical Corp., New York, president; Arthur W. Mohr, California Spray-Chemical Corp., Richmond, Cal.; L. P. Scoville, Diamond Alkali Co., Cleveland, Ohio; Charles H. Sommer, Jr., Monsanto Chemical Co., St. Louis, Mo.; Chester M. Brown, General Chemical Division, Allied Chemical & Dye Corp., New York; G. C. Romig, American Chemical Paint Co., Ambler, Pa.; and T. L. Wilkerson, American Cyanamid Co., New York.

one phase of this problem which I think is the key to our dearth of scientists and engineers today.

The great majority of our students come to us with an innate, overpowering fear of mathematics and any allied subject that depends even indirectly on an understanding of the symbolism of numbers. With here and there a brilliant exception, they are mathematically illiterate. I saw an orientation examination given to a sophomore college class in beginning statistics in which the first question was to answer "2/10 plus 3/10." Most of them answered correctly with "5/10." The next question was "2/10 times 3/10" and sixty-odd per cent of the class answered "6/10" instead of "6/100." As the questions mounted in difficulty from this inauspicious start, you can imagine where the class average was—about at the sixth grade level.

With this lack of foundation, hundreds of otherwise rather brilliant students side-step the sciences wherever it is possible to do so.

The reason for this illiteracy and fear is not hard to find. The Carnegie Corporation recently made a study of mathematics teaching in the high schools. They disclosed the fact that the high school teachers of mathematics in over one-third of the states needed to have no courses in college mathematics in order to be qualified for the job and elementary school teachers need not even have had a high school course in math!

With this sort of teacher preparation, it is no wonder that so many high school graduates grope their way through mathematics without ever having grasped the symbolism or learned the fascination of using figures as tools.

A recent survey reported by General Hull indicates that 57% of the senior bracket of the chemical industry have technical or scientific degrees. It would be interesting to know a little more about this group. How many received their technical degrees on top of a liberal arts degree? And how many received these from small colleges that still upheld a broad requirement in the liberal arts?

A study published in 1952 on the "Origins of American Scientists" listed the 50 institutions of the United States that lead the nation in the production per thousand graduates of working scientists. Only five institutions that made the list graduated more than 200 bachelors per year and only two, Johns Hopkins and the University of Wisconsin, could be called large universities, and the relatively small liberal arts colleges were in the ascendency. Considering all the schools studied, the conclusions on size were that the highest productivity of scientists is found in those institutions which are small enough to preserve their community atmosphere yet large enough to assure the adequacy of their faculty and facilities.

"Community atmosphere" implies an understanding and fellowship between students and faculty; an opportunity for faculty minds to kindle a spark of enthusiasm in the student that will encourage the search and not the passive reception of knowledge. The large universities do this admirably in the specialized upper division and graduate courses through seminars, close contact with the staff, and association in research, but it is too late then to light a torch for philosophy, history, literature and other avocational fields that would have added immeasurably to the student's later life.

I can't believe that the predominance of lawyers in top level management is wholly due to the necessity for a knowledge of the law in these positions as we see them filled adequately by administrators trained in a variety of other fields. The real reason for the predominance, it seems to me, stems back to the very general practice of law schools in selecting their students from college graduates whose undergraduate years were devoted to a broad general education and not glutted in the Blackstone and preliminary training in law subjects.

My plea, therefore, is for a minimum of professionals, technical courses at the undergraduate level—an introduction to the fields, their language, and the allure that these subjects are certain to have for some students. I would plead for breadth in all the sciences with broad coverage in the natural and biological fields and mathematics. The rest of the time, in fact the majority of the time, I would leave to an equally broad coverage of the arts, philosophy, history, literature, and government in order that the student might be better equipped to live with himself and his fellow men.

For research, development and teaching we need graduate training. My liberally trained undergraduate will probably be a little handicapped time-wise in competition with his fellow student who crammed a lot of his graduate preparation into his undergraduate years. My man may get his doctorate a year later, but I'll bet if they stay together for ten years, he will be the boss.

The Carnegie Foundation for the Advancement of Education devoted its annual report this year to the subject of "Liberal Education." They summarized in one paragraph what I have tried to say throughout this paper:

"The modern world is producing deeper and ever-ramifying specialization. But specialization can be based upon a sound foundation of liberal education. There is no reason why the specialist should not or cannot be an informed and cultivated citizen. It is not impractical for the technical or professional man to understand himself and his heritage. And it is within the reach of every specially trained man to have an awareness of the broader problems of his time. Indeed, if he does not, he is hardly worthy of the training which a generous society has lavished upon him."

Firms Register for California Sales

SAN FRANCISCO — Twenty two firms have registered with the Department of Agriculture in California since Dec. 17 to sell commercial fertilizers in the state.

Eleven of the firms are located in northern California, nine in the southern half of the state, and two from other states, including the United States Guano Corporation of Kingman, Ariz., and the White Chemical Company of Phoenix.

In addition to these are 11 firms which have registered within the past 3½ months to sell agricultural minerals. These include eight southern California firms, two northern California firms, and the Western Sulphur Corp. of Winnemucca, Nev.

Fertilizer Sales In Maryland Show Decrease in 1956

COLLEGE PARK, MD.—Fertilizer sales in Maryland during 1956 totaled 279,660 tons, down from 310,453 tons in 1955 and the all-time high of 311,232 tons in 1954, according to the state's Inspection and Regulatory Service.

Sales of complete mixed goods in 1956 amounted to 247,398 tons. Most popular grades were 5-10-10, 91,596 tons; 3-12-6, 32,262 tons; 5-10-5, 24,640 tons; 10-10-10, 16,226 tons; 2-12-12, 16,060 tons and 4-8-12, 15,086 tons.

Also included in 1956 sales were 12,133 tons of superphosphate-potash mixtures, 7,474 tons of nitrogen materials, 3,385 tons of superphosphate, 403 tons of potash salts and 533 tons of fertilizer-pesticide mixtures.

L. E. Bopst, state chemist, said the tonnage of fertilizer-pesticide mixtures represented an increase of 18% over the 1955 figure. He also reported that sales of 10-10-10 showed a significant gain. The major portion of the decrease in over-all sales from 1955 to 1956 was noted in spring sales, he said.

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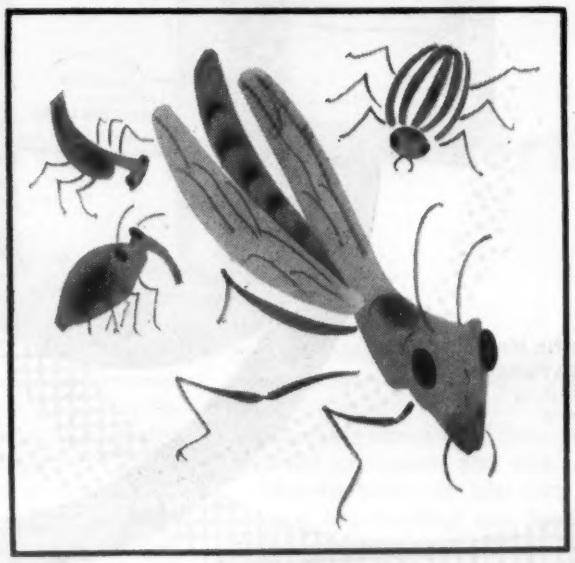

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TVA WORKSHOP

(Continued from page 1)

cotton under a variety of soil and price conditions.

B. W. Ellertsen of the Forestry Division said that TVA is considering a series of forest fertilizer tests. "The effects of fertilizer will be tested on tree seedling production in the nursery; on the reproduction of new forest stands, either artificially or naturally; on the production of wood and special products; on the production of seed; and on the control of insects and diseases," he said.

Mr. Ellertsen explained that "more information is needed about the effect of fertilizers on wood structure, on its specific gravity and fiber length and other characteristics affecting wood quality."

He also said that some tests have shown that tree mortality and other damage resulting from fungus and insect attack can be controlled or lessened by applying fertilizers to forests.

Four Michigan State University researchers described results on the economics of fertilizer use on beans and potatoes. The combination field plot-greenhouse experiment was conducted by Dr. Glenn Johnson, Dr. W. B. Sundquist, Dr. J. F. Davis, and Dr. L. S. Robertson.

Jack L. Knetsch, economist from TVA's Agricultural Economics Branch, Division of Agricultural Relations, discussed progress on a supplemental irrigation study designed for the South. This study would include many different crop and soil conditions in addition to the use of available rainfall data. Such conditions include the rate of intake and loss of moisture to the supply available in the soil, use of effective precipitation and various climatic and agronomic factors. Cost and return figures in addition to consideration of the other factors should enable farmers to determine the worth of supplemental irrigation in southern states, Mr. Knetsch said.

Dr. Earl O. Heady agricultural economist of Iowa State College, said that farm planning research in Iowa showed that, generally, owner-operators of 160- and 240-acre farms could profit by controlling erosion mechanically, by as intensive rotations as can be used and by fertilizing at much higher rates than are now being used.

Dr. Roger C. Woodworth, another economist from the University of Georgia, presented the possible returns from an acre of Coastal Bermuda grass on large commercial Georgia farms. Cost of the fertilizers, labor needed, returns in protein, tons of hay, and income from a beef cow and calf program were some of the factors figured. Fertilizer costing $132 per acre for 1,200 lb. netted $235 per acre in hay, according to Dr. Woodworth's figures.

Dr. Earl R. Swanson, agricultural economist at the University of Illinois, outlined a proposed research project which would explore the analysis of the area to be served by a bulk fertilizer blending plant, and which would outline a procedure for analyzing plant operations. Drs. George M. Beal and Joe M. Bohlen, Iowa State College researchers, told how a joint Iowa State-TVA project is aimed at learning how fertilizer dealers' services fit into their sales programs.

Dr. George Stanford, chief of TVA's Soils and Fertilizer Research Branch, Agricultural Relations Division, Wilson Dam, Ala., outlined how new TVA fertilizer projects being developed might fit into commercial fertilizer plant and farm operations.

Dr. Leland G. Allbaugh, director of TVA's Division of Agricultural Relations, set forth points to be discussed by a panel of discussion leaders.

The subject was "Capital and Credit Problems as They Affect Agricultural Resource Use." Discussion leaders were economists Dr. Howard Diesslin of the Farm Foundation, Chicago; Dr. Earl O. Heady, Iowa State College; and Dr. Glenn L. Johnson, Michigan State University.

Total attendance at this fourth annual conference was 75, from 13 states and Germany. Attending personnel represented primarily agricultural college research staffs, but included representatives of the U.S. Department of Agriculture and the fertilizer industry, as well as TVA.

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Plans for Merger Of Clopay Chemical And C&I Dropped

CINCINNATI—The Chemical and Industrial Corp. of Cincinnati has announced that the tentative plans for a merger with the Clopay Corp. have been dropped and that negotiations in connection with the merger have definitely been terminated.

The Chemical and Industrial Corp. will continue its normal business of designing and constructing plants for the production of nitric acid, phosphoric acid, sulfuric acid and the further processing of anhydrous ammonia. No changes are contemplated in the corporate set-up or business of the company.

GYPSY MOTH

(Continued from page 1)

Hudson River, including most of Rockland and Orange counties, and part of Sullivan and Ulster counties, starting date, April 16.

The spray will be applied by multi-engine aircraft, single-engine aircraft and helicopters. Spraying companies under contract will select their own airstrips from which to operate. Each contractor furnishes an observation aircraft for use of supervisory personnel.

About $5 million has been appropriated by state and federal governments for gypsy moth control and eradication programs in nine Northeastern states this season. State control operations will be conducted in some infested portions of the nine states. Other states in the infested area are Connecticut, Rhode Island, Massachusetts, New Hampshire, Vermont and Maine.

Since a single DDT treatment is expected to be adequate for a given area, next year's main spraying is planned for an area north and east of this year's operations.

Caterpillars (larvae) of the gypsy moth devour leaves of trees and cause several million dollars worth of damage each year in a 38-million-acre area in the northeastern states.

ASC MEETING

(Continued from page 1)

ith liquid fertilizers, particularly hen field-mixed, has many obvious ivantages. It is now possible, rough the development of certain ovel emulsifier compositions, to pre- are emulsifiable pesticide formula- ons which are compatible with con- ntrated liquid fertilizer solutions, ey concluded.

The conclusion that in fighting fires which aldrin is involved, fire fight- s should wear respiratory protec- on, was reached by research work one by three scientists from the ettering Laboratory, department of reventive medicine and industrial ealth, College of Medicine, Univer- ty of Cincinnati, who presented a aper at the ACS meeting. Their ork, entitled "Toxicity of Technical, ublimed Aldrin when Inhaled by nimals," described experiments ade by heating technical aldrin and easuring the degree of toxicity of e atmosphere.

The authors, Joseph F. Treon, Ed- in E. Larson, and John Cappel, tated that although the degree of oxicity of the atmosphere depends o a large extent upon the specific emperature to which the aldrin is eated, the relationship between tem- erature and toxicity is not direct ver a wide range of temperature, in art at least because of a decrease n the concentration of aldrin due to hermal decomposition, and in part ecause of a decrease in the toxicity f the decomposition products formed t or above 1000° F.

An increase in the temperature re- ults in an increase in the quantity f aldrin vaporized in the atmosphere, ut as the vapor-laden air is cooled o as to be respirable (from the spect of temperature) for experi- ental animals, much of the aldrin eparates out in particulate form and e concentration of the vapor re- ains but little elevated, they report- d.

When aldrin was generated into e atmosphere at 1320° F. it was ecomposed to such an extent that e residual concentration of aldrin as lower than when it was gener- ted at 200° F. At 1320° F., the con- entration of carbon monoxide be- ame a factor in the toxicity of the ontaminated atmosphere.

Scientists from the Utah Agricul- ural Experiment Station, Logan, dis- ussed the physiological effects of eeding systox residues to cows and alves. They experimented on 8 cows nd 14 calves for a period of 12 eeks, feeding them with alfalfa hay hat had been treated with various pplications of the pesticide a week rior to harvest. Calves were fed milk o which had been added purified ystox.

Measurements of cholinesterase ac- ivity of the blood indicated that all f the cows and calves were affected y the presence of the material. Ani- als receiving the greatest amounts f systox showed the greatest choline- terase inhibition, the speakers said.

However, no mortality occurred in e cows fed systox-treated hay. Cal- es receiving as litle as 0.05 mg. per g. of body weight showed only minor ymptoms, but those receiving 0.15 g. showed severe signs of toxicity hroughout the experiment. Mortality ccurred in calves receiving 0.45 and .35 mg., the report said.

Authors of the paper, all from the Utah Station, were L. C. Ellis, Thomas L. Bahler, J. L. Shupe, George E. Stoddard, Lorin E. Harris, nd D. A. Greenwood.

A review of the role played by pes- icides in accidental poisoning cases n the U.S. was presented by Dr. ernard E. Conley, committee on esticides of the American Medical ssociation, Chicago. He said that f all accidental injuries from pack- ed chemicals, pesticides are respon- ible for about 10%. A detailed study f death certificates for the postwar years 1946 to 1954 reveals that pesticides cause from 100 to 150 deaths annually, associated with solid and liquid substances. Regional studies of non-fatal poisonings indicate that pesticide products produce generally the same incidence of injury in nonfarm areas.

Dr. Conley drew attention to the rather large number of injuries attributed to the "older" pesticides—i.e., arsenicals—which recur year after year with surprising constancy.

The control of pesticide poisoning is a complex problem, for which there is no single or pat answer, he said. It is generally agreed that increasing safety awareness of the public, wider use of precautionary labeling, and improving the accuracy of poisoning statistics would go far in controlling unintentional intoxications.

Lawrence L. Cecil in Diamond Export Post

NEW YORK—Appointment of Lawrence L. Cecil, Jr., of Basking Ridge, N.J., as staff assistant in the export sales department of Diamond Alkali Company, Cleveland, was announced here by S. S. Savage, director of export sales.

At his new post, Mr. Cecil will devote his attention chiefly to promotion of agricultural chemicals sales, reporting to S. B. Honour, manager, export sales, agricultural chemicals.

Mr. Cecil comes to the Diamond organization from United States Pipe & Foundry Co., Birmingham, Ala., where he was engaged in export sales administration for the past three years. Previously, from 1950 to 1953, he was associated with Sherwin-Williams Co., Cleveland, which he represented in a sales and service capacity in Latin America.

NEMATODE

(Continued from page 1)

Station director, studies of nematodes, control methods and research into the kinds of crops materially affected, aside from soybeans, will be carried out.

James Epps, associate pathologist at the experiment station, will serve as USDA nematologist, it is understood. When the building, now under construction, is completed by midsummer, the station will be fully staffed and the first project, scheduled for Lake County, Tennessee, will get under way.

The extent of cyst nematode infestation in Mississippi valley states still is undetermined. It is likely that a far-flung survey will be launched, after the 1957 growing season starts. Such a survey would require participation by the several states.

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A WEEKLY NEWSPAPER FOR THE FARM CHEMICAL INDUSTRY

The regional circulation of this issue is concentrated in the Northeastern states.

Dealer Know-How Valuable To Fertilizer Purchaser

An article appearing in a recent issue of "Farm Management," circulated among West Coast farmers carried an article discussing whether or not farmers should "Shop for Bargains in Commercial Fertilizer." The points brought out in the article, although geared entirely to the farmer's viewpoint, include a few interesting thoughts for the men who sell plant food to these growers.

Farmers were reminded in the article that service is an important consideration in purchasing fertilizers, particularly the liquid types. Services including warehousing until needed, delivery to the field, proper calibration, advice on depth of injection, width and location of shank spacing, time or application, rates to use, etc, are all part of the price the farmer pays for the plant food.

The farmer who attempts to save money on fertilizer through a "do it yourself" program is "fighting his way in the dark," the article declares. The savings derived from purchases of cut rate ammonia, without service, is often offset by other factors, it says.

Here are some of the things a farmer needs to know when planning to apply his own ammonia, according to the magazine: 1) at what rate to use it; 2) what time of year is best to apply it; 3) at what depth it should be injected; 4) how many shanks should be used; 5) how to be sure it will go to work early; 6) how to be sure it won't delay maturity or content; 7) how to fit the ammonia to a cover crop program; 8) how to find the fertility levels of different soils; and 9) how to relate fertility levels to production.

"Most ammonia dealers are equipped to give a grower information on all of these points," it is stated. Some ammonia dealers have studied the subject of grain fertilization so thoroughly, it is pointed out, that they "are now in a position to examine the growing crop and tell the grower: 1) if he could profit from the top-dressing of more nitrogen; 2) the relative fertility of various fields; 3) if more nitrogen was available to the crop than necessary; 4) if the nitrogen supply ran out too soon; 5) if phosphate supply was adequate; and 6) what rate should be used on the next grain crop. It has been found that grain growers commonly underfertilize by 25 to 50 lb. nitrogen an acre."

Underfertilization can cost a grower from 10 to 20 bushels, or about 500 to 1,000 lb. of barley, which by very conservative figuring would be a loss of $13 an acre. "If we estimate that the additional fertilizer to provide this additional yield cost $5, we have a profit to the farmer for this 'know how' from his ammonia dealer which amounts to $8 an acre. Compare this potential profit with the price cut which a farmer might obtain when he buys his ammonia . . . without service and information," the editorial concludes.

It is an interesting study to see how farmers are being advised about the purchase and use of fertilizers.

Farmers Called "New Type of Executive"

American farmers, "The Men in the Blue Denim Suits" are fast becoming a new class of executives in the land, it is pointed out in an article appearing in DuPont's "Agricultural News Letter" recently. The term executive usually conjures up the image of a business man clad in a grey suit and striped tie, directing the activities of many men and women and the flow of thousands of dollars, but such a description doesn't necessarily fit the farmer.

Still, the farmer must do a first class executive job in order to remain in business. He must have a great capacity for planning; ability to organize; a knack for making decisions reaching well into the future; an acceptance of responsibility for the failure or success of his business; and he must find and use information gleaned from all the resources that can help him in his operations.

In addition, he must be shrewd in the investment of his income so he won't tie up too much of his cash in supplies; and he must be familiar with government laws and rules that apply to much of his work.

He is the final customer of the pesticide and fertilizer trades. He's a shrewd and independent thinker who must be sold on the idea of making optimum use of these products. That's our job.

Lion In Ads No Fake

The picture of a lion appearing in a series of Monsanto Chemical Co. advertisements in Croplife of late, has evinced quite a little talk by readers, some of whom cast aspersions on the scenes which show a huge King of Beasts perched majestically on a stack of fertilizer bags. "It's trick photography," some opined, while others, less articulate, merely shrugged it off with the thought that "It can't be."

They're wrong. We wouldn't say they are lyin' about the lion, but the beast is real, and he was photographed out in the open without benefit of ropes, chains, or other restraining apparatus.

He is "Jackie," fifth in a line of lions who have earned their livelihood as motion picture performers. In fact, he is the critter who appeared in "Samson and Delilah," and is considered likely to have roles in subsequent movies and other shows wherein a beast of his character is considered appropriate.

The lion belongs to I. S. "Trader" Horne, proprietor of the "World Jungle Compound" at Thousand Oaks, Cal., north of Los Angeles. He assured timid photographers sent out to take pictures of the animal in the open, that Jackie is so tame that he could be trusted to frolic on the living room floor with a child. It was noted, however, that the picture-takers left their own youngsters at home while the shots were being made. These assurances, after all, had come from the owner, not the lion himself.

Thus ends the story of the Lion lion. It's true, in the mane, they say. Anyone who sees a lion in his back yard will now feel reassured that there is no particular danger. It's probably just Jackie out for a stroll, in which case the children may continue their play, unconcerned.

As for ourselves, we think we'll go in the house and bolt the door, thanks.

More Urban Encroachment

Present-day practices of subdividing land has been the subject of numerous complaints on the part of many who see good farm lands being turned into housing projects and other non-productive uses.

Louis A. Wolfanger, professor of land use at Michigan State University, said in a recent address that "millions of acres of our flattest and most fertile farm lands are going to non-farm uses, while low-grade farm land which could have been used, has been bypassed." He added: "Although we can condition poor land to take its place, such land can never be converted to first-class farm land."

Prof. Wolfanger no doubt has a good point here, but the whole picture of increasing urbanization illustrates the shrinking of total farm acres and the continuing necessity of producing more crops on these remaining acres.

The role of both fertilizers and pesticides will be of increasing importance as this process goes on.

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Croplife

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CROPLIFE is a controlled circulation journal published weekly. Weekly distribution of each issue is made to the fertilizer manufacturers, pesticide formulators and basic chemical manufacturers. In addition, the dealer-distributor-farm adviser segment of the agricultural chemical industry is covered on a regional (marketing-area) basis with a mailing schedule which covers consecutively, one each week, four geographic regions (Northeast, South, Midwest and West) of the U.S. with one of four regional dealer issues. To those not eligible for this controlled distribution Croplife subscription rate is $5 for one year ($8 a year outside the U.S.). Single copy price, 25¢.

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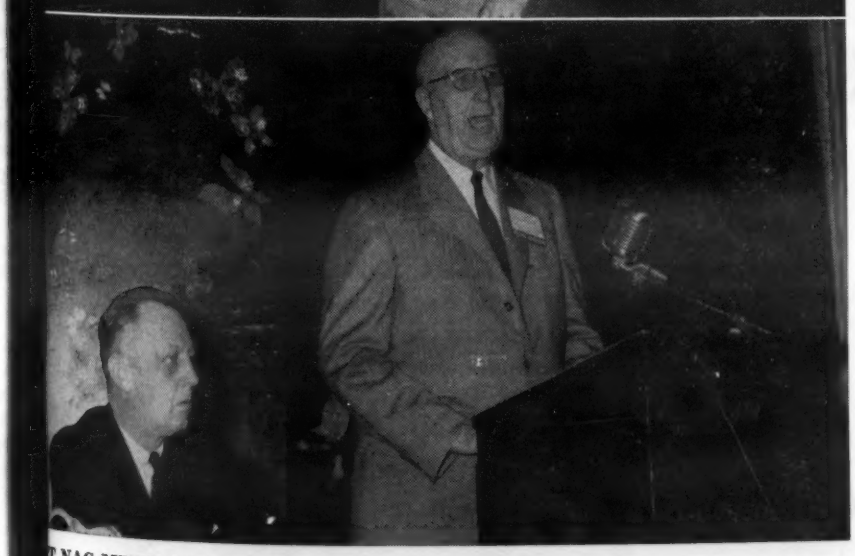

T NAC MEETING—Speakers at the recent spring meeting of the National gricultural Chemicals Assn. at San Francisco are shown above. In the top w, from left to right, are Earl Coke, vice president, Bank of America, San rancisco; Fred W. Hatch, NAC president; J. A. Walker, general credit manger of Standard Oil Company of California, San Francisco; and Stanley B. reeborn, provost, University of California, Davis.

Second row pictures speakers at final day's session. From left to right, e Fred C. Shanaman, president, Pennsylvania Salt Mfg. Company of Washgton, Tacoma, addressing the group; Jack C. Vernon, NAC vice president d chairman of the session; John T. Coyne, pesticide regulation section, ant Pest Control Branch, U.S. Department of Agriculture, Washington, C.; and R. L. Furniss, chief of the division of forest insect research, Pacific rthwest Forest and Range Experiment Station, USDA, Portland Ore.

In the third row are members of the NAC staff who presented reports the meeting. Left to right: Lea S. Hitchner, executive secretary and treasr; Jack Dreessen, herbicide expert; Miss Lee Grobé, assistant treasurer d office manager; and Joseph A. Noone, technical adviser for the associan. Below is C. O. Barnard, executive secretary of the Western Agricultural emicals Assn., San Jose, Cal. speaking to the audience. Seated is F. W. tch, chairman of that session.

Demonstrations Set For California Range Fertilization Project

SAN FRANCISCO — Cattle raisers will learn the results of one of the biggest range fertilization trials ever held in California later this month.

Tests were begun last fall on some 600 acres of foothills in Tulare County in the central part of the state, and demonstrations will be made in mid-month by Robert Miller, Tulare County farm advisor, who has been working with Jack Shannon and John Guthrie, Tulare County cattlemen, and with Richard Schade, representing Brea Chemicals, Inc. Brea has provided the fertilizer for the tests.

In the trial, some 250 lb. of ammonium sulfate per acre was applied to the 600 selected acres, and an 800 acre field adjoining was left unfertilized to serve as a check.

Each field was stocked to its normal carrying capacity last fall, and additional cattle were added to the fertilized field as feed conditions warranted. At the present time the fertilized field has about one head to each 1.3 acres as compared to one head to each 2.5 acres in the unfertilized fields, or almost twice the carrying capacity.

The cattle were weighed into each field and the profit and loss on this range fertilization test will be determined when the cattle are weighed later this month. The results of using different types of fertilizer in a small ungrazed plot will also be shown.

Field Day Theme Set

NEW HAVEN, CONN. — Research on trees is to be the theme of the annual field day of the Connecticut Agricultural Experiment Station at the experimental farm in Mt. Carmel Aug. 14, James G. Horsfall, director, has announced. He noted that inquiries on trees are probably at an all-time high so far as the station staff is concerned. J. Peter Johnson, West Haven, is general chairman of the field day committee.

NEW JERSEY FIELD DAY

NEW BRUNSWICK, N.J. — Crops and Livestock Field Day will be held June 28 at the Experiment Station, Rutgers University here.

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